

# CHAPTER 9

## CONSISTENCY WITH NATIONAL STANDARDS AND OTHER LAWS AND POLICIES

### 9.1. National Standards for Fishery Conservation and Management

**National Standard 1** – *Prevent Overfishing, Achieve Optimum Yield – Conservation and Management Measures Shall Prevent Overfishing While Achieving, on a Continuing Basis, the Optimum Yield from Each Fishery for the United States Fishing Industry.*

The CRE-FMP would, through permit and reporting requirements, monitor and control fishing effort in the EEZ to prevent overfishing of coral reef resources. A special permit and reporting system would be established for new fisheries in the EEZ targeting previously unharvested coral reef resources for which there is insufficient information to define overfishing or optimum yield. A special permit would also be required for any CRE fishing in low-use MPAs. In addition, large tracts of coral reef in the EEZ would be designated as no-take MPAs. These would conserve a large reservoir of spawning biomass and provide “insurance” against periods of poor recruitment or overexploitation of down-current sub-populations. Furthermore, deep-water spawning stocks of fish species that have already been heavily exploited at shallow depths would be protected from intensive harvest using scuba-assisted spearfishing.

**National Standard 2** – *Best Scientific Information – Conservation and Management Measures Shall Be Based upon the Best Scientific Information Available.*

For coral reef resources already targeted by existing fisheries and for which there is sufficient information to define sustainable yield, the CRE-FMP would prevent overfishing according to the protocol described in the FMP. For previously unharvested MUS, the FMP would collect detailed fishery-dependent information through a special permit and reporting system. This would be supplemented by fishery-independent data collected through research. Through a framework procedure, the FMP could adapt to new information and unforeseen impacts. An evaluation of new data and the biological, economic, and social impacts of the management system would be made each year as part of the annual status report prepared by the Council for the coral reef fisheries managed in the Western Pacific.

**National Standard 3** – *Manage Stocks as a Unit – To the Extent Practicable, an Individual Stock of Fish Shall Be Managed as a Unit Throughout its Range, and Interrelated Stocks of Fish Shall Be Managed as a Unit or in Close Coordination.*

Individual sub-populations of larger stocks of reef species may increase, decrease, or cease to exist locally without adversely affecting the overall population. The condition of the overall populations of particular species is linked to the variability among sub-populations: the ratio of sources and sinks, their degrees of recruitment connection, and the proportion of the sub-populations with high variability in reproductive capacity. Recruitment to populations of coral reef organisms depends largely on the pathways of larval dispersal and “downstream” links. One needs to ask, Are the connections sufficient to actually enhance distant sub-populations or only enough to maintain a homogenous genetic stock? There is poor understanding of the basics, much less the intricacies, of individual stocks and of their interrelationships in the coral reef ecosystem. To compensate, the CRE-FMP proposes extensive no-take MPAs. They do not require detailed knowledge of species while holistically conserving multi-species resources and the functional attributes of coral reef ecosystems.

**National Standard 4 – *Do Not Discriminate Between States – Conservation and Management Measures Shall Not Discriminate Between Residents of Different States. If it Becomes Necessary to Allocate or Assign Fishing Privileges among Various United States Fishermen, Such Allocation Shall Be (A) Fair and Equitable to All Such Fishermen; (B) Reasonably Calculated to Promote Conservation; and (C) Carried out in Such Manner That No Particular Individual, Corporation, or Other Entity Acquires an Excessive Share of Such Privileges.***

The allocation of fishing privileges to indigenous participants in coral reef fisheries resulting from the proposed management measures is rationally connected to the furtherance of CRE-FMP objectives. Furthermore, the total potential benefits that indigenous participants may receive from the preferred alternatives outweigh the potential hardship that may be imposed on non-indigenous participants, when the centuries-old dependence of native people on coral reefs and the social importance of indigenous cultural continuity are considered. The measure is reasonably calculated to promote conservation, and no particular individual, corporation, or other entity is expected to acquire an excessive share of the fishing privileges allocated to indigenous participants. Participation in coral reef fisheries will not be limited to residents of the U.S. Pacific Islands.

**National Standard 5 – *Efficiency in Utilization – Conservation and Management Measures Shall, Where Practicable, Consider Efficiency in the Utilization of Fishery Resources; Except That No Such Measure Shall Have Economic Allocation as its Sole Purpose.***

Coral reefs harbor a great diversity of marine organisms, but the relative productivity and potential harvest of any single species is limited. Existing methods of harvesting coral reef resources in the U.S. Pacific are highly inefficient, and the CRE-FMP purposely does not promote greater efficiency in these fisheries. In fact, the proposed conservation and management measures would create additional inefficiencies in the form of area closures (i.e., no-take MPAs), special permit and reporting requirements, and fishing gear restrictions.

The preferred alternatives emphasize the need to sustain existing small-scale fisheries for coral reef resources, while limiting the harvest of new resources targeted by new fisheries until

sustainable use can be demonstrated. Particular support is given to fishing communities and indigenous participants because of the importance of coral reef resources as a source of food for local consumption and as a means of preserving and perpetuating indigenous cultural values. The many economic and social benefits of coral reefs to island societies would be maintained by the proposed conservation measures in the plan.

It is impossible to provide a quantitative estimate of how many more coral reef resources would be available if the CRE-FMP is approved and implemented, or how much additional benefit would accrue to the Nation by this increase. It is clear, however, that the value of the potential economic and social benefits derived from the proposed conservation and management measures outweigh the costs that may be imposed on fishing activities affected by the closure of MPAs, special permit and reporting requirements, and gear limitations.

**National Standard 6** – *Allow for Variations – Conservation and Management Measures Shall Take into Account and Allow for Variations Among, and Contingencies In, Fisheries, Fishery Resources and Catches.*

The special permit and reporting requirements for low-use MPAs and for new coral reef resources targeted by new fisheries are expected to produce new information, especially for poorly understood coral reef taxa for which there are few data to define sustainable yield. An evaluation of new data and unforeseen biological, economic, and social impacts resulting from the FMP management system will be made each year as part of the annual status report prepared by the Council for the coral reef fisheries managed in the Western Pacific region. During the evaluation, the views and opinions of the full range of stakeholders, including consumptive and non-consumptive users of coral reefs, will be solicited. The conservation and management measures may be adjusted as new information becomes available.

**National Standard 7** – *Management Measures Shall Minimize Costs – Conservation and Management Measures Shall, Where Practicable, Minimize Costs and Avoid Duplication.*

Several of the proposed conservation and management measures would add substantially to the responsibilities and costs of fishery administration and enforcement. Specific elements likely to increase the difficulty and cost of fishery management are (1) the designation of seaward boundaries for no-take MPAs, (2) zoning of low-use MPAs, (3) the requirement for wreck removal and pollution liability insurance for all fishing vessels passing through MPAs, and (4) the highly discretionary special permit application and reporting process. The preferred alternative, however, avoids duplication with existing local permits issued by island governments and with federal permits for fishing activities conducted in the EEZ under existing FMPs for lobster, bottomfish, and precious corals.

**National Standard 8** – *Importance to Fishing Communities – Conservation and Management Measures Shall, Consistent with Conservation Requirements of this Act (Including the Prevention of Overfishing and Rebuilding of Overfished Stocks), Take into Account the Importance of Fishery Resources to Fishing Communities in Order to (A) Provide for the*

*Sustained Participation of Such Communities; and (B) to the Extent Practicable, Minimize Adverse Economic Impacts on Such Communities.*

The social and economic history of the populated U.S. Pacific Islands differs considerably from that of the continental U.S. Samoa, Hawaii, and the Mariana Islands were originally settled in ancient times by seafaring peoples. The lack of terrestrial resources in most areas led to great dependence on fishing for food security. This dependence shaped the social organization, cultural values, and spiritual beliefs of the indigenous populations.

The era of European discovery brought the island cultures into direct conflict with western traditions of proprietorship. Repeated contacts with western culture eroded the stability of the social structures and subsistence economies created by indigenous people.

With the exception of American Samoa and small enclaves in Guam, Hawaii, and the Northern Mariana Islands, the modern-day indigenous descendants are dispersed as part of cosmopolitan populations. Island societies have become pluralistic, and many aspects of their economies and cultures have evolved in modern times. Yet, the vast majority of contemporary island residents continue to depend on coral reef resources for consumptive and non-consumptive uses. Most residents consume seafood, and many are at least part-time fishermen. The harvest of coral reef resources is important to U.S. Pacific Island inhabitants as a source of food for local consumption, for local income and employment, and as a means of preserving and perpetuating indigenous cultural values.

The MSFCMA has recognized that Pacific insular areas “contain unique historical, cultural, legal, political and geographic circumstances which make fisheries resources important in sustaining their growth.” The proposed conservation and management measures take into account the centuries-old relationships of indigenous people with coral reef resources, and the continuing dependence of modern-day, pluralistic island communities on these resources. The siting of no-take MPAs in remote areas of the EEZ, the proposed allocation of a portion of low-use MPAs for indigenous fishing activities, and the reliance on proposed local reporting requirements in parts of the EEZ adjacent to existing fishing communities and indigenous activities are expected to minimize adverse economic impacts.

**National Standard 9 – Minimize Bycatch – Conservation and Management Measures Shall, to the Extent Practicable, (A) Minimize Bycatch and (B) to the Extent Bycatch Cannot Be Avoided, Minimize the Mortality of Such Bycatch.**

Existing coral reef fisheries in the U.S. Pacific Islands produce little bycatch because of relatively selective gears and diverse food preferences of island seafood consumers. The restrictions on gear and fishing methods are intended to minimize bycatch. A condition of the permit system will require that all bycatch be reported. If a particular fishery, gear, or method is shown to produce excessive bycatch, regulatory or administrative action can be taken.

**National Standard 10** – *Promote Safety – Conservation and Management Measures Shall, to the Extent Practicable, Promote the Safety of Human Life at Sea.*

The FMP proposes to designate MPAs where vessel anchorage and passage would be restricted. These measures would not promote vessel safety, but neither are they expected to put vessels at risk because anchoring and passage would not be restricted in emergency situations. The latter are recognized under maritime law (*force majeure*) regardless of any regulations implemented through the FMP.

## **9.2 Other Applicable Laws and Policies**

### **9.2.1 Federal Laws and Policies**

#### *Coastal Zone Management Act (CZMA)*

Section 307 (C) of the CZMA requires that any Federal activity affecting the land or water uses or natural resources of a state's coastal zone be consistent with that state's approved coastal management program, to the maximum extent practicable. In this instance, Hawaii, Guam, American Samoa, and the CNMI all have approved coastal zone management programs. This Fishery Management Plan, therefore, must be reviewed to determine if the measures will or are likely to affect the coastal zone. The management measures in this CRE-FMP will be implemented in a manner that is consistent to the maximum extent practicable with the approved coastal zone management programs of American Samoa, CNMI, Guam, and Hawaii. The Council will send a copy of the draft FMP to the state coastal agencies for concurrence.

#### *Endangered Species Act (ESA)*

The Endangered Species Act provides for the protection and conservation of endangered and threatened species. Once a species is listed as endangered or threatened, it is afforded protection under the ESA and takings are prohibited. This process ensures that projects authorized, funded, or carried out by federal agencies do not jeopardize the species' existence or result in the destruction or modification of habitat critical to the species existence. Consultation takes place by NMFS, and USFWS as appropriate, and is required if the fishery affects, directly or indirectly, endangered or threatened species or any designated critical habitat. While developing the CRE-FMP, the Council included measures to minimize any adverse impacts. Therefore, the Council has determined that this FMP is not likely to have any significant adverse effects to listed species or their critical habitats.

Under the ESA, NMFS is required to prepare an impact assessment, which may serve as a biological assessment for consultation under Section 7 of the ESA. This document (including Volume II, the EIS) assesses the impacts to endangered and threatened species and their habitats from the management measures in the CRE-FMP.

The species that have been listed as endangered or threatened under the Endangered Species Act and have been observed in the region where reef-related fisheries operate are as follows:

Hawaiian monk seal (*Monachus schauinslandi*)  
Olive ridley turtle (*Lepidochelys olivacea*)  
Leatherback turtle (*Dermochelys coriacea*)  
Loggerhead turtle (*Caretta caretta*)  
Hawksbill turtle (*Eretmochelys imbricata*)  
Green turtle (*Chelonia mydas*)  
Humpback whale (*Megaptera novaeangliae*)  
Sperm whale (*Physeter macrocephalus*)  
Blue whale (*Balaenoptera musculus*)  
Fin whale (*B. Physalus*)  
Sei whale (*B. Borealis*)  
North Pacific Right whale (*Eubalaena japonica*)

Other listed species that potentially could be affected by the actions proposed under the preferred alternative of the plan are land based. These species could be impacted by potential invasive species accidentally introduced by fishing vessel grounding or discharge of floating debris.

Laysan duck (*Anas platyrhynchos laysanensis*)  
Laysan finch (*Telespyza cantans*)  
Nihoa millerbird (*Acrocephalus familiaris kingi*)  
Nihoa finch (*Telespyza ultima*)  
Micronesian megapode (*Megapodius laperouse laperouse*)  
*Sesbania tomentosa* (legume)  
*Schiedea verticillata* (fleshy root herb)  
*Pritchardia remota* (palm)  
*Amaranthus brownii* (weedy herb)  
*Mariscus pennatiformes* (sedge)  
*Cenchrus agriminioides* (*kamanomano*)

#### ***Marine Mammal Protection Act (MMPA)***

The Marine Mammal Protection Act of 1972, as amended, allows for the incidental take of marine mammals during commercial operations under certain limited circumstances, including incidental takings during commercial fishing. However, all fisheries in the Western Pacific Region are classified as Category III, which designates the fishery as having a remote likelihood

or no known incidental taking of marine mammals. If any interactions do occur, the fishermen are required to report them. In developing the CRE-FMP, the Council considered actions which would minimize adverse impacts from the fishery, and developed mitigation measures.

The following marine mammal species (cetaceans) that are protected under the MMPA, but not listed as endangered or threatened, occur in the areas where reef-related fisheries operate:

Pacific white sided dolphin (*Lagenorhynchus obliquidens*)

Rough-toothed dolphin (*Steno bredanensis*)

Risso's dolphin (*Grampus griseus*)

Bottlenose dolphin (*Tursiops truncatus*)

Spotted dolphin (*Stenella attenuata*)

Spinner dolphin (*Stenella longirostris*)

Striped dolphin (*Stenella coeruleoalba*)

Melon-headed whale (*Peponocephala electra*)

Pygmy killer whale (*Feresa attenuata*)

False killer whale (*Pseudorca crassidens*)

Killer whale (*Orcinus orca*)

Pilot whale (*Globicephala melas*)

Blainsville's beaked whale (*Mesoplodon densirostris*)

Cuvier's beaked whale (*Ziphius cavirostris*)

Pygmy sperm whale (*Kogia breviceps*)

Dwarf sperm whale (*Kogia simus*)

Bryde's whale (*Balaenoptera edeni*)

### ***National Environmental Policy Act (NEPA)***

The National Environmental Policy Act requires that any major federal action significantly affecting the human environment must disclose the environmental consequences of the proposed action through an Environmental Impact Statement (EIS). An EIS was prepared for this FMP,

and all required components of the EIS are contained in Volume II, including issues relating to public scoping periods, consulted agencies, impacts, and alternatives.

### *Paperwork Reduction Act (PRA)*

The purpose of the PRA is to control the burden on the public (i.e., fishermen), businesses, county, state, and territorial governments, and other entities of providing information to the federal government. The Act is intended to ensure that the information collected under the proposed action is needed and collected in an efficient manner (44 U.S.C. 3501(1)).

### Proposed Data Collection Program:

This FMP will not initially require additional reporting in the populated areas of American Samoa, Guam, CNMI, and the main Hawaiian Islands for Currently Harvested Coral Reef Taxa (CHCRT). In these areas, where local data collection and fishery monitoring already occurs, the Council will work through these existing reporting programs to obtain data. For other Council FMPs, coordinated data processing has been established for Hawaii, Guam, the CNMI, and American Samoa. The CRE-FMP will follow these established procedures. Creel survey, logbook, and/or commercial buyer's data will be collected and processed by the appropriate local agencies. In areas where no reporting systems exist, the Council will develop mechanisms for monitoring and reporting specifically for that locality. Reporting requirements for these areas could include reporting types and quantity of gear used, units of gear set, time at start and end of set, units of gear lost, numbers and weights of species kept, numbers released, reason for discards, how the catch is processed, area(s) fished, length of the trip, average weather conditions, depth of area fished, observed damage to the coral reef, and all protected species interactions. For all fishing in the NWHI and the PRIAs (where allowed), and for emerging fisheries harvesting previously unharvested taxa in the CNMI and MHI, reporting requirements will be established via special permits. The annual report required under the FMP will summarize and analyze the information collected. Island-specific annual report modules will be produced by island agency Plan Team members and provided to the Council where they will be combined with other required materials to produce the CRE-FMP Annual Report. Federal logbooks are submitted directly to the NMFS-HL. Annual reports are due by July 31 of each year.

Although this FMP will not require additional permits to harvest CHCRT in populated areas, in the low-use MPAs in the NWHI and at Palmyra, Johnston, and Wake, a special permit will be required for CHCRT. Also, for emerging fisheries in the CNMI and MHI, a special permit will be required for targeting Potentially Harvested Coral Reef Taxa. For all areas, incidental catch of coral reef taxa taken under other FMP-managed fisheries will require no additional permit or reporting other than existing systems.

### Estimate of Permit Application and Reporting Burden and Cost:

The permit application and reporting requirements would require a certain level of scientific expertise, which would bring a certain level of costs. Under the special permit application, the applicant is required to provide a description of the planned fishing operation, including general



timing, duration and location of fishing and gear operation, resources (directed and incidental) expected to be harvested under the special permit, expected catch, and estimated ecosystem-level, habitat, and protected species impacts of the proposed harvest. A typical fisherman's knowledge and expertise is sufficient to meet the special permit reporting requirements. Because reporting costs are variable, the differential effects among entities would be small. Relatively few of the region's coral reef fishery participants would be affected by the measures outlined in the CRE-FMP, and of these participants only a few would be significantly affected.

It is estimated that between 10-20 permits will be issued annually to coral reef-related fisheries in the EEZ of the Western Pacific Region. The general permit application, although not immediately implemented under the preferred alternative, is estimated to require one hour to complete. Therefore, the permitting burden for general permits would be 10-20 hours annually. The special permit is estimated to require two hours to complete, totaling 20-40 hours for the special permit annual burden.

The total reporting burden hours are estimated to be 1,125 hours per year, assuming 15 vessels in the fleet make an average of 10 trips per year, averaging 15 days per trip, and the additional daily burden is 30 minutes. The total burden hours for the special permit are estimated to be 750 hours per year, assuming five vessels in the fleet make an average of 10 trips per year averaging 15 days per trip and the additional daily burden is one hour per fishing day.

See the Regulatory Impact Review (Appendix B) for additional information on estimated reporting burden and cost.

#### *Regulatory Flexibility Act (RFA)*

The Regulatory Flexibility Act requires that agencies assess and present the impacts of their proposed actions on small business entities. It has been determined that an initial RFA (IRFA) is required. After public review, a final RFA may be required. The IRFA may be found in Appendix B.

#### *National Wildlife Refuge Administration Act of 1966 (NWRAA)*

The NWRAA establishes guidelines, policies, and directives for the administration and management of areas within the National Wildlife Refuge System (NWRS). The NWRAA authorizes the Secretary of the Interior to administer the NWRS for the conservation and management of wildlife and plant resources, while providing for compatible wildlife-dependant recreational activities within the NWRS boundaries. The Act requires congressional action for the divestiture of lands and waters within the NWRS, with few exceptions.

Under the CRE-FMP, no USFWS-managed resources are expected to be negatively affected because the FMP has designated all coral reef habitat found within and around refuges as no-take or low-use MPAs. In no-take MPAs, the harvest of all marine resources is prohibited, including those resources managed under other FMPs. Areas designated as low-use MPAs allows for the continuation of recreational fishing and on-island consumption under the special permit regime.

Any proposed fishing activity within the NWR boundary would require a compatibility determination by the USFWS and thorough evaluation through the special permit system proposed under this FMP.

### *Fish and Wildlife Coordination Act*

The Fish and Wildlife Coordination Act, as amended, created a coordination process between the USFWS and other federal and state agencies whose actions may modify, impound, divert, or otherwise control waters or other bodies of water. Agencies must consult for the purpose of "preventing loss of and damage to wildlife resources." Added provisions require equal consideration and coordination of wildlife conservation with other water resource development programs and authorizes the Secretary of the Interior to provide public fishing areas and accept donations of lands and funds. Under the CRE-FMP, waters under the joint jurisdiction of the Department of Commerce and the Department of Interior will not be modified, impounded, diverted or controlled by the proposed action. Areas containing coral reef habitat within refuge boundaries, where the USFWS prohibits all extractive uses, are designated no-take MPAs under this FMP. In areas where the USFWS allows recreational fishing and on-island consumption, the CRE-FMP has accommodated this by designating these areas as low-use MPA requiring special permits. Details of MPAs are discussed in Section 5.2- Marine Protected Areas.

### *Executive Order 8682*

Executive Order 8682 established Naval Defensive Sea Areas and Naval Airspace Reservations around the territorial waters of several islands and reefs in the PRIAs. The Order authorizes the Secretary of the Navy to control entry into areas designated as naval defensive seas areas. The CRE-FMP recognizes the authority of the Department of Defense to control entry into naval defensive sea areas around those territories at any time to facilitate military preparedness. Thus, it will in no way affect the authority of the Department of Defense to conduct activities in any area it administers.

### *Executive Order No. 12866-Regulatory Impact Review*

Executive Order 12866 requires that a Regulatory Impact Review (RIR) be prepared for all regulatory actions that are of public interest. This review provides an overview of the problem, policy objectives, and anticipated impacts of the action, and ensures that management alternatives are systematically and comprehensively evaluated so that the public welfare can be enhanced in the most efficient and cost-effective way. Also, the RIR requires analysis of distributive impacts and costs of government administration and private compliance with the proposed measures.

The general purpose of the RIR, as well as the RFA described above, is to make the regulatory process open and transparent so that the steps in the regulatory decision-making process are easily followed. The economic analysis provides decision-makers and the public with the agency's best estimate of the impacts of proposed actions and their alternatives.

In compliance with this EO, an analysis of impacts of regulatory actions is provided in the draft Regulatory Impact Review found in Appendix B.

### *Executive Order No. 13112- Invasive Species*

Executive Order 13112 establishes guidelines to ensure that actions proposed by federal agencies, to the extent practicable by law, take into account and mitigate the introduction of invasive species. The EO also establishes an Invasive Species Council to provide national leadership regarding invasive species and to ensure that federal agency activities concerning invasive species are coordinated, cost-efficient, and effective. The management measures proposed in the CRE-FMP likely will not cause or promote the introduction of invasive species, rather they will minimize the risk of introduction of alien species by restricting access in the no-take and low-use MPA proposed for sensitive coral reef ecosystems. Additionally, special permits, which are issued on a case-by-case basis, will be required for fishing in low-use MPAs in the NWHI, Wake, Palmyra, and Johnston Atoll.

### *Executive Order No. 13089-Coral Reef Protection*

In June 1998 the President signed an Executive Order for Coral Reef Protection, which established the Coral Reef Task Force (CRTF) and directed all federal agencies with coral reef-related responsibilities to develop a strategy for coral reef protection. Federal agencies were directed to work cooperatively with state, territorial, commonwealth, and local agencies; non-governmental organizations; the scientific community; and commercial interests to develop the plan. The Task Force was directed to develop and implement a comprehensive program of research and mapping to inventory, monitor, and address the major causes and consequences of degradation of coral reef ecosystems. The Order directs federal agencies to use their authorities to protect coral reef ecosystems and, to the extent permitted by law, prohibits them from authorizing, funding, or carrying out any actions that will degrade these ecosystems.

Of particular interest to the Council is the implementation of measures to address: (1) fishing activities that may degrade coral reef ecosystems, such as overfishing, which could affect ecosystem processes (e.g., the removal of herbivorous fishes leading to the overgrowth of corals by algae) and destroy the availability of coral reef resources (e.g., extraction of spawning aggregations of groupers); (2) destructive fishing techniques, which can degrade essential fish habitat (EFH) and are thereby counter to the Magnuson-Stevens Act; (3) removal of reef substrata; and (4) discarded and/or derelict fishing gear, which can degrade EFH and cause "ghost fishing."

To meet the requirements of Executive Order 13089, the Coral Reef Task Force issued the *National Action Plan to Conserve Coral Reefs* in March 2000. In response to the recommendations outlined in the *Action Plan*, the President announced Executive Order 13158, which is designed to strengthen and expand Marine Protected Areas.

*Executive Order No. 13158—Marine Protected Areas Memorandum of Understanding on Protection of U.S. Coral Reefs in the Northwest Hawaiian Islands*

On May 26, 2000, the President announced his commitment to protect the natural and cultural resources found within the marine environment by strengthening and expanding the Nation's system of marine protected areas (MPAs) to protect the natural and cultural marine heritage for future generations. This is to be accomplished by all pertinent federal agencies sharing information, tools, and strategies to develop a national system of MPAs. The Department of Commerce and the Department of the Interior are required to consult with those states that contain parts of the marine environment, and Regional Fishery Management Councils, among others, to promote coordination when establishing and managing MPAs.

Under Executive Order 13158, each federal agency whose authorities provide for the establishment or management of MPAs shall take appropriate actions to enhance or expand protection of existing MPAs and establish or recommend, as appropriate, new MPAs. Throughout the development of the CRE-FMP, the Council, along with the advisory bodies and plan teams, have analyzed existing MPAs and developed recommendations to establish new ones in all areas under Council jurisdiction. This FMP includes those recommendations.

Concurrent with the announcement of the President's Executive Order 13158, a Memorandum of Understanding was delivered by the President. In this memorandum, the President determined that the coral reef ecosystem in the Northwestern Hawaiian Islands deserved strong and lasting protection. To this end, he directed the Secretary of the Interior and the Secretary of Commerce, working cooperatively with the State of Hawaii and consulting with the Western Pacific Regional Fishery Management Council, to develop recommendations within 90 days for a new, coordinated management regime to increase protection of the ecosystem and provide for sustainable use.

In the process of developing the CRE-FMP, the Council has consistently worked cooperatively with the Department of the Interior, the Department of Commerce, and the State of Hawaii, as well as numerous other agencies. Currently, the Chairman of the State of Hawaii Department of Land and Natural Resources is a designated voting member of the Council, and the Pacific Islands Manager of the U.S. Fish and Wildlife Service serves as a non-voting member. In addition, in developing the CRE-FMP the Council relied on members of the various plan teams to develop recommendations based on their combined expertise. Staff members from the U.S. Fish and Wildlife Service and the State of Hawaii Department of Aquatic Resources are represented on the coral reef ecosystem plan team.

The main issues to be addressed by the EO and recommendations from the memorandum of understanding figure prominently in the CRE-FMP. For example, after much discussion, the advisory panels developed an MPA network that will protect coral reef areas of special value in the NWHI and PRIA. The Council advocates that 24% of NWHI coral reefs be classified no-take MPAs. In the areas where human activities are allowed, the FMP establishes measures to ensure that their actions will not degrade the coral reef ecosystem. In addition, throughout the FMP the

Council has considered the potential for human impacts on threatened and endangered species, and developed measures designed to afford the greatest protection.

In addition to the fishery-related cooperative recommendations, the cooperative recommendations should identify any further measures necessary to protect cultural and historic resources and artifacts, and also allow culturally significant uses of the NWHI marine resources by Native Hawaiians. History clearly demonstrates how coral reef ecosystems have been vital to Native Hawaiians, and throughout the CRE-FMP this relationship is documented. The Council developed a Fishery Rights of Indigenous Peoples Advisory Panel to work closely with other advisory bodies, ensuring that the rights of the indigenous peoples are not overlooked.

In addition, the cooperative recommendations should also establish a framework for scientific research and exploration, and establish a framework for facilitating recreation and tourism in the NWHI as well. An important theme in the CRE-FMP is balancing coral reef ecosystem conservation with sustainable human use. The scientific data obtained in the NWHI are critical to an understanding of coral reef ecosystems, which will ensure comprehensive management.

*The Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (Executive Orders 13178 and 13196)*

On December 4, 2000, President Clinton announced Executive Order 13178, which established the Northwestern Hawaiian Islands Coral Reef Ecosystem (NWHI-CRE) Reserve. It established conservation measures that restrict activities throughout the Reserve, and Reserve Preservation Areas around certain islands, atolls, and banks, where almost all consumptive or extractive uses are prohibited. Executive Order 13196, issued January 18, 2001, modified the earlier Executive Order by revising some of the conservation measures and making the Reserve Preservation Areas permanent. The reserve is approximately 1,200 nm long and 100 nm wide, and includes all submerged lands and waters seaward of the seaward boundaries of the State of Hawaii and the Midway Atoll National Wildlife Refuge in the NWHI.

The Reserve is intended to be a temporary management regime until completion of the process to designate the NWHI as a National Marine Sanctuary. On January 19, 2001, the NOAA/NOS Office of National Marine Sanctuaries announced its intent to initiate the Sanctuary designation process for the Reserve pursuant to sections 303 and 304 of the National Marine Sanctuaries Act (16 USC 1433, 1434). During this process, NOAA will prepare an environmental impact statement and management plan, which will examine the management, boundary, and regulatory alternatives associated with sanctuary designation. As required, NOAA must also initiate public scoping meetings to solicit information and comments on the range and significance of issues related to sanctuary designation and management. The Executive order states that "the Secretary of Commerce shall supplement or complement the existing Reserve, and ... in consultation with the Governor of the State of Hawaii, determine whether State submerged lands and waters should be included as part of the Sanctuary."

As summarized here, a range of conservation measures are established by the EO. All current commercial federal fishing permits and effort and take are capped at the previous year's level

(from December 4, 2000) except for bottomfish fishing, which is capped to the individual permittee's average annual take over the previous five years. Only vessels with permits valid in the year preceding December 4, 2000, are allowed to operate in the Reserve. An individual harvest quota will be established for each permit holder, but permits are non-transferable (they expire with the individual permit holder). Recreational fishing and pelagic trolling are capped at levels reported taken preceding the order. Additionally, no permits will be issued for any fishing activity that did not have a permit in the year preceding December 4 2000." The Executive orders further states that "the Secretary, following consideration of any advice or recommendations of the Western Pacific Fishery Management Council, may further restrict fishing activities." Other prohibited activities (unless noted otherwise) include no offshore oil or mineral development, no anchoring on live or dead coral where the bottom can be seen, no drilling or dredging, no discharging material, and no removal of living/non-living resources.

In Reserve Preservation Areas, executive orders measures prohibit almost all activities to 100 fm around most islands. These include anchoring where buoys are available or outside a designated area, taking or touching living or dead coral, and discharging or depositing any material except cooling water or engine exhaust. Straight-line latitude /longitude boundaries are to be developed for each Reserve Preservation Area. Bottomfishing and recreational trolling are still allowed to 25 fm around some islands (Nihoa, Necker, Gardner, Maro, Lisianski) and to 50 fm around Laysan. Some banks are closed out to 12 nm from their approximate center; these are the bank east of French Frigate Shoals, SE Brooks Bank, St. Rogatien, the bank west of St. Rogatien and the bank east of Gardner, Raita Bank and Pioneer Bank. However, except for the bank east of French Frigate Shoals and SE Brooks Bank, bottomfishing and recreational trolling are allowed. For Raita Bank and the bank west of St. Rogatien, bottomfishing and recreational trolling will be allowed for five more years. Native Hawaiian uses specified by the Executive order allow subsistence, and cultural and religious uses in the Reserve and Preservation Areas (in yet-to-be-identified sub-areas), provided that these uses do not injure the coral reef ecosystem and related marine resources. The Midway Atoll National Wildlife Refuge (NWR; 22 x 22 nm) is not included in the Reserve. Complementary management with the Hawaiian Islands NWR is proposed, but nothing in the Executive order shall enlarge or diminish the jurisdiction or authority of DOI in managing its Refuge. The Department of Defense and USCG are exempt from the Executive order.

The Secretary of Commerce has not established final departmental policy for several important stipulations in the EO that are unclear. Enforcement agencies are unable to develop a complete enforcement plan and there are no published regulations. It is also unclear how restrictions will be enforced since boundaries defined by bottom contours must be converted to straight-lines defined by latitude-longitude coordinates. How individual fishing caps will be determined based on the "year preceding the December 4 2000 EO" is still being discussed. (According to the Code of Federal Register §660.12, the fishing year begins on January 1 and ends on December 31. How fishing caps will be determined for recreational fishing is also problematic because there is no permit or reporting requirement for recreational fishing in Hawaii.

## *Ecosystem-Based Fishery Management*

Recognizing the potential of an ecosystem-based management approach to improve fisheries management, Congress requested that NMFS convene a panel of experts to assess the extent to which ecosystem principles are currently applied in fisheries research and management and recommend how best to integrate ecosystem principles into future fisheries management and research. In April 1999, this Ecosystems Principles Advisory Panel (EPAP) submitted a report to Congress entitled *Ecosystem-Based Fishery Management*. It concludes that the U.S. must develop governance systems that have as their primary goals ecosystem health and sustainability, rather than short-term economic gain. In addition, the report states that adopting ecosystem-based fishery management and research will result in more sustainable fisheries and healthier marine ecosystems, and also more economically sound coastal communities. The panel provides fisheries management and policy recommendations for implementation by NMFS and the Councils.

As discussed in this FMP, the Council developed the CRE-FMP to incorporate ecosystem approaches into the present regulatory structure. In its *Ecosystem-Based Fishery Management Report*, the EPAP stressed that "FMPs for single species or species complexes should be the basic tool of fisheries management for the foreseeable future. However, management actions alone are not sufficient to implement an ecosystem approach." The mechanism to integrate FMPs with ecosystem principles, goals, and policies recommended by the EPAP is a demonstration Fisheries Ecosystem Plans. This CRE-FMP is intended to serve as the demonstration plan.

### **9.2.2 Coral Reef Legislation**

Several bills have been initiated in response to Executive Order 13089 addressing coral reef conservation, restoration, and preservation. These bills, introduced by both the House and the Senate, would provide grants to state, federal, territorial, and commonwealth natural resource management authorities, or any educational institution or other non-government organization with coral reef conservation expertise. A brief description of the language of the bills as they exist in their current form are outlined below.

#### *Coral Reef Conservation Act of 1999, S.725*

This bill was introduced by Senator Snowe to preserve, protect, and restore the health of coral reefs and coral reef ecosystems, to assist in the conservation and protection of coral reefs by supporting conservation programs and providing financial resources for such programs, and to establish a formal mechanism for collecting and allocating monetary donations from the private sector to be used for coral reef conservation projects. Any U.S. state or territory natural resource management authority, other government agency with jurisdiction over coral reefs, or any educational institution or non-government organization with demonstrated expertise in conservation of coral reefs is eligible to apply for the grant. If passed, appropriations of \$15 million would be available for each fiscal year 2001-2004.

### *Coral Reef Protection Act of 1999, S.1253*

This Bill was introduced by Senator Inouye to preserve and restore the health of coral reef ecosystems, support coordinated conservation programs, provide financial assistance, and establish a funding allocation mechanism. This grant would be open to any state, federal, or territorial agency with coral reef jurisdiction, or any organization with coral reef expertise. If passed, appropriations of \$20 million for each fiscal year 2000-2004 would be available.

### *Coral Reef Conservation Act of 2000, H.R. 1653*

The Coral Reef Conservation Act of 2000, passed into law in 2001, authorizes \$16 million annually from 2000-2004 to the Secretary of Commerce for two coral reef programs. The National Program allows the Secretary to conduct coral reef related activities such as mapping, research assessments, monitoring, restoration, marine debris removal and public outreach. This program will also allow the Secretary to conduct activities to enhance compliance with laws that regulate the taking of coral reef resources, develop scientific information on the conditions of coral reefs, and coordinate activities and programs related to coral reefs conducted by federal agencies. The Coral Reef Conservation Program allows the Secretary to fund grant projects that conserve coral reefs and involve affected local communities. Projects funded by this program require a 50% matching fund or in-kind contributions unless waived by the Secretary.

## **9.2.3 State, Local, and Other Applicable Laws and Policies**

Green (1997) summarizes existing state laws and policies that relate to the management of coral reef ecosystems. Every effort has been made to ensure that the management measures in this FMP are compatible with state laws and policies in order to simplify implementation and assist enforcement efforts. Table 9.1 summarizes existing state regulations and resource management activities pertaining to coral reefs.

## **9.2.4 Safety Considerations: fishery access and weather-related vessel safety**

The management measures contained within this FMP will not negatively impact the safety of vessels participating in the coral reef fisheries of the Western Pacific Region. New permit requirements will enhance safety by allowing monitoring of the number and type of vessels participating in coral reef resource harvesting. The proposed framework action to require satellite-based vessel monitoring systems (VMS) to track vessels participating in coral reef fisheries would greatly increase vessel safety by allowing government enforcement agencies to continuously monitor vessel positions. In addition, VMS units provide vessel operators the ability to send emergency signals to the USCG if needed. The framework action to create "no anchor zones" would limit the number of vessels on the banks at one time therefore reducing the likelihood of vessel collisions and groundings. However, more vessels in close proximity to one another increase the response and assistance time if an emergency were to occur enhancing safety at sea.



**Table 9.1: Summary of existing state resource management activities in American Samoa, CNMI, Guam, and Hawaii that contribute to the protection of coral reef ecosystems (modified from PBDC 1995).**

Activity	American Samoa	CNMI	Guam	Hawaii
<p>1. General Laws and Regulations</p>	<p>DMWR: Manage, protect and preserve marine resources, including coral reef ecosystems; ban spearfishing with scuba (2001).                      ASEPA: Water quality regulation of activities in the water.                      FBNMS: Prohibits gathering, taking, breaking, cutting, destroying or possessing corals and other invertebrates. Fishing restrictions also apply.                      ASCMP: Protect unique areas and resources; develop strategies for coastal hazards; conservation of marine resources; coordination of planning, monitoring, and enforcement by government agencies.</p>	<p>CRM: Coastal use permitting, enforcement and education.                      DEQ: Environmental quality, earthmoving, stormwater control permitting, pesticide application certification, wastewater disposal system permitting; water quality standards and permitting; recreation water quality monitoring.                      DLNRM: Submerged lands leasing. (Transferred to Dept. of Public Lands).                      DFW: Fishing regulations, marine sanctuary regulations, management and enforcement; aquarium fish permitting and enforcement; Public Law 10-year moratorium on the harvest of sea cucumbers and seaweeds.                      Historic Preservation Office: Submerged historic property protection.</p>	<p>DOA/DAWR: Preservation and protection of fish and wildlife; protection of endangered species and habitats; regulates destructive fishing and sizes of lobster (no spearing), trochus and giant clam; 3 no-take and 2 limited-take MPAs (enforced since Jan 00).                      DLM: Seashore protection act review for development on shoreline to 10 fm. Territorial Seashore Protection Commission reviews and approves or disapproves development in Seashore Reserves.                      Parks &amp; Recreation: Recreation water use management plan implementation.                      GCMP: Reviews, approves or disapproves activities requiring Federal Action in coral reef areas through Federal consistency.                      GEPA: Water Pollution Control Act, Water Quality Standards, and Soil Control &amp; sedimentation regs. protect water quality and aquatic resources. Clearing and Grading permits designed to protect coral reefs and habitats.</p>	<p>CZM: Preservation of valuable coral reef resources; Federal consistency review.                      DLNR: Establish and Manage Marine Life Conservation Districts in which taking of coral or altering substrate normally prohibited.                      DOH: Rules prohibit discharge of pollutants into state waters. NPDES permit required.                      Admin. Rules 11-54 requires conservation of coral reefs and wilderness areas in AA waters.</p>

Table 9.1 (cont.)

Activity	American Samoa	CNMI	Guam	Hawai
<p>2. Prohibiting or Restricting Taking of Corals</p>	<p>DMWR: Regulations prohibit collecting of coral in less than 60 feet of water; commercial harvest below 60 ft requires permit; dynamite fishing illegal; willful destruction of coral while fishing is illegal; destruction of fish habitat illegal.</p> <p>FBNMS: Regulations state that no corals can be taken; damage prohibited; NMFS enforces—agreement with DMWR for enforcement pending.</p> <p>ASCMP: Rules prohibit dredging or filling of coral reefs and other submerged lands unless public need demonstrated, no environ. preferable alternatives available, and adverse impacts minimized; protect marine resources and unique areas including reefs; only dependent uses permitted.</p>	<p>DFW: Fishing regulations prohibit taking of live or dead coral except for betel lime—all types of coral covered.</p>	<p>DOA: Specific statutes prohibit taking of coral without permit—"need for revision."</p> <p>Seashore Protection Act: Permit required for removal. Only removal for scientific purposes permitted.</p> <p>GEPA: Water Pollution Control Act and Water Quality Standards provide general protection of coral reefs and marine resources (successful out-of-court settlement in coral damage from ship grounding).</p>	<p>DLNR: HRS 188-68 prohibits the intentional taking of, breaking or damaging any live stony coral including any live reef or mushroom coral. Eight species are identified in the statute. Exceptions may be granted for certain scientific, education or other public purpose if adverse impacts are minimized.</p>

Table 9.1 (cont.)

Activity	American Samoa	CNMI	Guam	Hawaii
<p>3. Prohibiting Drilling, Blasting and/or Dredging</p>	<p>ASCMP: Project Notification and Review System reviews all projects in AS. Board's concern in avoiding or mitigating damage to environ., including coral reefs. Enforcement provided by ASCMP (2 wetland conservation officers and 2 compliance officers). Violations result in stop work orders; continued violations referred to AG.</p> <p>DMWR: Prohibit use of explosives on reefs and destruction of fish habitat. Regs enforced by DMWR enforcement officers.</p> <p>EPA: Water Quality Standards required Certificate for any of these activities.</p> <p>FBNMS: Drilling, dredging, blasting and any other alteration of the seabed prohibited.</p>	<p>CRNL Actions affecting reefs subject to CRM permitting. Enforcement via permitting programs by CRM staff.</p> <p>DFW: Regulations prohibit taking of live or dead coral except for betel lime—all types of coral covered.</p>	<p>DLM: Territorial Seashore Protection Commission: Permits required for all such activities within Seashore Reserve (to 10 fathoms). Requirement for EA or EIS which must be approved by Guam EPA. Environmental Protection Plan required and must be approved by GEPA before DPW permit can be issued.</p> <p>GEPA: Section 401 certification required: All operations would require an approved Environmental Protection Plan. Blasting would require approved blasting plan to limit fish kill radius to 100' max. Enforcement done by inspectors from DPW, GEPA, and DLM.</p>	<p>DLNR: HRS 188-23 prohibits possession of explosive for taking of aquatic life. Drilling, dredging and blasting in nearshore waters require Conservation District Use Permit. Because ACOE permit also required, CZM would conduct Federal consistency review. If permit based on CWA 404 permit, Water Quality Certification from DOH also mandatory.</p>

Table 9.1 (cont.)

Activity	American Samoa	CNMI	Guam	Hawaii
4. Prohibiting or Restricting Anchoring	<p>FBNMS: Anchoring must be done so that there is no damage to bottom formations. Mooring buoys have been installed in the past, but currently none. No restrictions exist in other parts of the Territory.</p>	<p>No restrictions. DLNRM has placed mooring buoys in 17 locations. A DFW grant enabled the now extant Marine Technology program at Northern Marianas Community College to install 10 mooring buoys at popular dive sites on Saipan-Tinian in 1995-96.</p>	<p>No law addresses anchor damage to coral reefs. DAWR Installed 30 shallow-water moorings around Guam to address anchor damage.</p>	<p>DLNR: HRS 190 authorizes regulation of anchoring and mooring in Marine Life Conservation Districts; HRS 200 restricts boats in certain reef areas; Day moorings exist in some areas and rules to curb anchoring in coral rich areas have been proposed. CZM: HRS 205A restricts anchoring on coral reefs because of likely adverse environmental and ecological impacts.</p>
5. Prohibiting or Restricting Vessel Discharge	<p>ASEPA: AS law prohibits discharge of oil or hazardous substances from boats. Fines \$100-\$1,000. USCG also enforces discharge regs (OPA 90) and levies fines for oil and sewage spills. FBNMS: Discharge prohibited.</p>	<p>No local regulations. USCG has regulations under OPA 90 and DEQ is a first responder to a spill.</p>	<p>GEPA: Local water quality standards regulations restrict vessel discharges in local waters; Police Department, GEPA, and DAWR have enforcement authority under Guam Safe Boating Act, Rec. Water Use Mgt. Rules and Regs., Endangered Species Act, Guam Clean Water Act, and Guam Litter Control Act.</p>	<p>DOH: All vessel discharges are prohibited in State waters. USCG: Has OPA 90 rules in effect. DPS Marine Patrol and USCG enforce discharge regulations cooperatively.</p>
6. Control of Other Point Source Pollution	<p>ASCMP: PNRS provides for review of all projects and compliance with Federal and Territorial laws and regs. ASEPA: NPDES permits required for all discharges. AS Environmental Quality Act provides for standards at and distances from discharges. FBNMS: Discharges prohibited.</p>	<p>CRM: Permitting program; enforcement via field monitoring and enforcement program.</p>	<p>USCG: Has OPA 90 rules and enforcement authority. GEPA: NPDES permit required for point source discharges; Section 401 certification required for discharges; water quality monitoring for discharges.</p>	<p>DOH: NPDES permit is primary regulation and control of discharges in coral reef areas. Applications are reviewed for their impact of aquatic ecosystems by DLNR and for consistency with CZM objectives and policies by CZM program. USFWS and NMRS have programmatic monitoring and enforcement responsibilities.</p>

Table 9.1 (cont.)

Activity	American Samoa	CNMI	Guam	Hawaii
<p>7. Control of Non-Point Source Pollution</p>	<p>ASEPA: AS Water Quality Act covers regulations for use of septic tanks, pesticides, activities resulting in soil erosions, litter and solid waste disposal.                      ASCMP + other agencies: PNRS requires permits for new projects. Admin. rules prohibit discharge of untreated sewage, petroleum products and other pollutants or hazardous material; taking of sand and aggregate material outside designated sites; destruction of reef matter not assoc. w/permitting; disposal of trash; un-permitted dredge and fill activities. Non-regulatory measures include public education aimed at reducing erosion and impact of piggeries; TA provided when required; solid waste and oil collection facilities provided.</p>	<p>CRM: Project permitting, plan approvals; new best management practices evaluation starting.                      DEQ: Water quality monitoring.</p>	<p>GEPA: Construction Site Erosion and Sediment Controls required. New rules in formative stage including vegetative control and landscaping standards.</p>	<p>DOH: Limited control over non-point source pollution. Storm water runoff from county and industrial sources requires NPDES permit. Have programs that promote methods for controlling non-point source pollution. Counties have promulgated requirements for construction sites.                      County and other State agencies within the CZM network of agencies have other regulatory and non-regulatory measures that contribute to control of non-point source pollution. Non-regulatory measures include use of siltation basins, grassing, and prohibition of motorized traffic.</p>

Table 9.1 (cont.)

Activity	American Samoa	CNMI	Guam	Hawaii
8. Proposed Non-Point Source Pollution Measures	ASCMP: Current policy of stream bank buffer of 25 ft for private and 50 ft. for commercial project now used in environmental review will be made part of ASCMP Admin. rules. Non-regulatory measures include demo project voluntary compliance on proposals, public education, tax incentives and subsidies for those using BMPs.	CRM and DEQ now developing coastal non-point source pollution plan. 6217 marina measures expected to be incorporated. Additional mgt. measures to be developed for golf course development and wildfires. DEQ existing requirements cover storm waters. Marine water quality monitoring expected to be upgraded.	Land-Use Master Plan for Guam contains performance standards designed to reduce non-point source pollution.	Numerous non-regulatory provisions are being considered for marina, agricultural forestry, urban and other activities. State dedicated to developing a workable non-point source pollution plan in the Hawaiian context. Conflicting perspectives and values of feds and state may make it difficult to complete program. Legislative action will drive schedule.
9. CZMA 6217 Plan Completed	Final approval expected in October 2002.	Final approval expected in 2003.	Final approval expected in June 2003.	Implemented July 2000.

Acronyms:

- ASCMP: American Samoa Coastal Management Program  
 ASEPA: American Samoa Environmental Protection Agency  
 CRM: Coastal Resources Management, CNMI  
 CZM: Coastal Zone Management Program, HI  
 DAWR: Division of Aquatic and Wildlife Resources, DOA, Guam  
 DEQ: Division of Environmental Quality, CNMI  
 DFW: Division of Fish and Wildlife, CNMI  
 DLM: Department of Land Management, Guam  
 DLNR: Department of Land and Natural Resources, HI  
 DMWR: Department of Marine and Wildlife Resources, AS  
 DOA: Department of Agriculture, Guam
- DOH: Department of Health  
 DPS: Department of Public Safety  
 EPA: Environmental Protection Agency  
 GCMP: Guam Coastal Management Program  
 GEPA: Guam Environmental Protection Agency  
 NPDES: National Pollution Discharge Elimination System  
 PNRS: Project Review and Notification System, AS  
 USCG: United States Coast Guard

## 9.3 Jurisdictional Issues

### 9.3.1 Introduction

This section reviews the complex issues surrounding marine boundaries in the Western Pacific Region. Delineation of current marine boundaries is discussed and specific areas of contention between various federal and state authorities are summarized.

### 9.3.2 Exclusive Economic Zone

The 1976 Fishery Conservation and Management Act (the Magnuson Act, and later, after amendments, the MSFCMA)<sup>1</sup> established U.S. jurisdiction from the seaward boundary of the territorial sea out to 200 miles for the purpose of managing fishery resources. Passage of the Magnuson Act was the first unilateral declaration of jurisdiction over a 200-mile zone by a major power. Presidential Proclamation 5030 of March 10, 1983, expanded Magnuson Act jurisdiction by establishing the U.S. exclusive economic zone; it declared, "to the extent permitted by international law ... sovereign rights for the purpose of exploring, exploiting, conserving and managing natural resources, both living and non-living, of the seabed and subsoil and the superjacent waters" in the 200-mile zone. The assertion of jurisdiction over the EEZ of the United States provided a basis for economic exploration and exploitation, scientific research, and protection of the environment under the exclusive control of the U.S. government. Congress confirmed presidential designation of the EEZ in 1986 amendments to the Magnuson Act. Under the Magnuson Act, fishery management authority in the EEZ off American Samoa, Guam, Hawaii, the Northern Mariana Islands, and other U.S. islands in the central and western Pacific is the responsibility of the Western Pacific Regional Fishery Management Council.

The EEZ is measured from the "baseline" of U.S. states and overseas territories and possessions out to 200 nautical miles. Under the Magnuson Act, the shoreward boundary of the EEZ is a line coterminous with the seaward boundary, baseline, of each "state." (As used elsewhere in this document, U.S. territories and possessions in the Western Pacific fall within the definition of state under the Magnuson Act (16 U.S.C. 1802, MSFCMA § 3 104-297)). In the case of the CNMI and the PRIAs, the EEZ extends to the shoreline (Beuttler 1995).

Seaward boundaries (territorial seas) for states are recognized as extending out to a distance of three miles from the ordinary low-water mark, as established by the Submerged Lands Act (SLA) of 1953.<sup>2</sup> The Territorial Submerged Lands Act (TSLA) of 1960 was enacted to convey to the

---

<sup>1</sup>The MSFCMA was initially referred to as the Magnuson Fishery Conservation and Management Act, which was changed to the Magnuson-Stevens Fishery Conservation and Management Act by the 1996 amendment to the Act.

<sup>2</sup>Under the SLA, the term "boundaries" or the term "lands beneath navigable waters" is interpreted as extending from the coastline to three geographical miles into the Atlantic Ocean or the Pacific Ocean, or three marine leagues (9 miles) into the Gulf of Mexico.

governments of American Samoa, Guam and Virgin Islands the submerged lands from the mean high-tide line out to three geographic miles from their coast lines (Beuttler 1995).

The CNMI was part of the United Nations Trust Territory of the Pacific Islands (administered by the U.S.) until 1978 when its citizens chose to become a U.S. commonwealth by plebiscite and it was agreed to by Congress. Although title of the emergent land was conveyed to the Commonwealth, the U.S. government withheld title to the submerged lands of the archipelago.<sup>3</sup> Submerged lands and underlying resources adjacent to CNMI remain owned by the federal government and subject to its management authority (Beuttler 1995).

In the PRIAs, for which there are no sovereign entities similar to states or territories, various federal agencies have jurisdictional authority. Authority is often established through statutes, Executive orders, and Presidential Proclamations, and marine boundaries are often unclear. For this reason, the extent to which an agency exercises its jurisdictional authority is subject to legal interpretation.

### **9.3.3 Territorial Seas**

#### *State of Hawaii*

The State of Hawaii consists of all islands, together with their appurtenant reefs and territorial waters, which were included in the Territory of Hawaii under the Organic Act of 1900. Under the Admissions Act of 1959, Congress granted to Hawaii the status of statehood and all amenities of a state, which included the reversion of title and ownership of the lands beneath the navigable waters from the mean high-tide line seaward, out to a distance of three miles, as stated by the SLA of 1953. Congress excluded Palmyra Atoll Kingman Reef, and Johnston Atoll, including Sand Island, from the definition of the State of Hawaii in 1959. The federal government also retained 1,765 acres of emergent land in the NWHI, which had been set aside by Executive Order 1019 in 1909, establishing the Hawaiian Islands Reservation (HIR). The HIR was later renamed the Hawaiian Islands National Wildlife Refuge (HINWR) after it was transferred from the Department of Agriculture to the Department of Interior in 1939 (Yamase 1982).

#### *Territories of Guam and American Samoa*

Pursuant to the TSLA of 1960, the Territories of Guam and American Samoa own and have management responsibilities over the marine resources out to three "geographic" miles. In general, the authority of the MSFCMA begins at three nautical miles from the shoreline at Guam and American Samoa. There are, however, exceptions to the management authority in the Territories. For example, the federal government administers waters in National Wildlife Refuges and naval defense sea areas (NDSA)(see below).

---

<sup>3</sup> The Territorial Submerged Lands Act was enacted for CNMI on October 5, 1974 (Beuttler 1995). Congress approved the mutually negotiated "Covenant to Establish a Commonwealth of the Northern Marianas (CNMI in political union with the U.S.)". However, the Covenant was not fully implemented until 1986, pursuant to Presidential Proclamation number 5564, which terminated the trusteeship agreement (Beuttler 1995).



### 9.3.4 US Fish and Wildlife Refuges and Units

The USFWS has been given authority to manage a number of NWRs in the Western Pacific Region. The USFWS asserts the authority to manage marine resources and activities, including fishing activities within Refuge boundaries pursuant to the National Wildlife Refuge System Administration Act (NWRSAA) of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, and other authorities (Gillman 2000). The USFWS asserts that NWRs are closed to all uses until they are specifically opened for such uses. They also claim that the USFWS is “solely” charged with making decisions whether to open NWRs for specific purposes that are compatible with the refuge’s primary purposes and mission (Smith 2000a).

Executive Order 1019 reserved and set apart Laysan and Lisianski Islands, and Maro and Pearl and Hermes Reefs, excluding Midway, “as a preserve and breeding ground for native birds” to be administered by the Department of Agriculture. The HIR was transferred to the DOI in 1939 and in 1940 renamed the HINWR through Presidential Proclamation 2466, with control transferred to the USFWS. Within the HINWR, the USFWS asserts management authority over coral reef resources to a depth of 10 fm around all islands with the exception of Necker Island, where it asserts a 20 fm boundary. The USFWS acknowledges that all HINWR islands are part of the State of Hawaii, but asserts that the islands are federally owned and administered as a NWR by the USFWS (Smith 2000b; USFWS 1999b).

Kure Atoll was initially included in Executive Order 1019 in 1909, which establish the HIR. However, Kure Atoll was returned to the Territory of Hawaii in 1952 by Executive Order 10413 (Yamase 1982). Kure Atoll is the only State Wildlife Refuge in the NWHI and extends out three miles, to the State’s seaward boundary (J. Feder pers. com.).

In the PRIAs, the USFWS—based on interpretation of Executive Order 7358—asserts that its refuge boundaries extend to the extent of the NDSA, which was administered by the Department of Defense before the transfer of surplus land to the USFWS. The USFWS currently manages seven wildlife refuges in the PRIAs: Jarvis, Baker, and Howland Islands, Johnston and Midway Atolls with Kingman Reef and Palmyra Atoll being the most recent additions (Smith 2000b).

On January 18, 2001, the USFWS, through Secretarial Order 3223, declared Kingman Reef and the surrounding submerged lands and waters as a National Wildlife Refuge out to a distance of 12 nautical miles. Additionally, Secretarial Order 3224 declared the tidal lands and submerged lands and waters of Palmyra Atoll as a National Wildlife Refuge out to a distance of 12 nautical miles.<sup>4</sup>

---

<sup>4</sup>A September 15 2000, legal opinion by Randolph Moss, Assistant Attorney General, U.S. Department of Justice, states that they are “unconvinced that the President has the authority to establish or expand a wildlife refuge within the U.S. territorial sea (12 miles) or the EEZ using presidential authority recognized in *Midwest Oil*.” Because the National Wildlife Refuge System Administration Act does not itself contain a provision authorizing the President to withdraw land for a wildlife refuge, the DOI argues that the President could rely on the implied authority to reserve public lands recognized in *United States v. Midwest Oil Co.* 236, U.S. 459 (1915). The Federal Land Policy and

Midway Atoll NWR, established under Executive Order 13022 in 1996, is located in the NWHI and has a refuge boundary that is within a 22 by 22 mile quadrant surrounding the atoll (the exact boundary is disputed). The Navy established a Naval Air Facility at Midway in 1941. The USFWS established an overlay refuge in 1988 to manage the fish and wildlife on the Atoll. Through the Base Alignment Closure Act of 1990, as amended, the Naval Air Facility closed in 1993 and the property was transferred to the USFWS in 1996 (USFWS 1999a). The mission of the refuge is to protect and restore biological diversity and historic resources of Midway Atoll, while providing opportunities for compatible recreational activities, education and scientific research (Shallenberger 2000). Through a long-term cooperative agreement with a private company (Midway Phoenix Corp.), the refuge has been open to the public for marine recreation and education (Shallenberger 2000).

Johnston Atoll NWR is managed cooperatively with the Navy. The atoll was first established as a federal bird refuge on June 29, 1926, through Presidential Executive Order 4467 to be administered by the Department of Agriculture. In 1934, through Executive Order 6935, the atoll was placed under the jurisdiction of the Navy for administrative purposes and has been used as a military installation since 1939. In 1941 Executive Order 8682 designated Johnston and other Pacific atolls NDSAs. Since 1976, the USFWS, under agreement with the military, assists in management of fish and wildlife resources on the atoll. The USFWS manages a recreational fishing program in the NWR (Smith 2000b).

Administration of Jarvis, Howland, and Baker Islands were transferred from the Office of Territorial Affairs to the USFWS in 1936 to be run as NWRs. The USFWS asserts refuge boundaries out to three nautical miles, and it prohibits fishing and any type of unauthorized entry (Smith 2000b). The USFWS acknowledges the Council's fishery management authority, in coordination with the NMFS, within the "200-nautical mile EEZ" (Smith 2000b).

Rose Atoll NWR, located in American Samoa, was established through a cooperative agreement between the Territory of American Samoa and the USFWS in 1973. Presidential Proclamation 4347 exempted Rose Atoll from a general conveyance of submerged lands around American Samoa to the Territorial Government. The boundary of the refuge extends out to three miles around the atoll and is under the joint jurisdiction of the Departments of Commerce and Interior, in cooperation of the Territory of American Samoa. Here too, the USFWS acknowledges fishery management authority of the Council, in coordination with the NMFS, within the "200-nautical mile EEZ" (Smith 2000b).

---

Management Act (FLPMA) of 1976 repealed the Presidents authority, effective on and after approval of the Act, to make withdrawals and reservations resulting from acquiescence of Congress (*U.S. v. Midwest Oil Co.*). Moss continued by stating that they find "it likely that a court would find that §704(a) of the FLPMA prohibits the President from relying on the implied *Midwest Oil* authority to withdraw lands, regardless of where those lands are located." Also, he notes that "they do not think history makes it clear that the President may continue make *Midwest Oil* withdrawals in the territorial sea or EEZ following the enactment of the FLPMA."

In the Ritidian Unit of the Guam National Wildlife Refuge, USFWS has fee title, which includes 371 acres of emergent land and 401 acres of submerged lands down to the 100-foot bathymetric contour. The submerged lands adjacent to Ritidian were never transferred to the Territory of Guam pursuant to the TSLA by the Federal government. In 1993, the USFWS acquired the emergent land of the Ritidian Unit and the surrounding submerged lands from the Navy at no cost (Smith 2000b).

### **9.3.5 Department of Defense Naval Defensive Sea Areas**

A number of Executive Orders have given administrative authority over territories and possessions to the Army, Navy, or the Air Force for use as military airfields and for weapons testing. In particular, Executive Order 8682 of 1941 authorizes the Secretary of the Navy to control entry into NDSAs around Palmyra, Johnston, and Midway Atolls, Wake Island, and Kingman Reef. The NDSA includes "territorial waters between the extreme high-water marks and the three-mile marine boundaries surrounding" the areas noted above. The objectives of the NDSA are to control entry into naval defensive sea areas; to provide for the protection of military installations; and to protect the physical security of, and ensure the full effectiveness of, bases, stations, facilities, and other installations (32 CFR Part 761). In addition, the Navy has joint administrative authority with the USFWS of Johnston Atoll and sole administrative authority over Kingman Reef. In 1996 Executive Order 13022 rescinded the Midway Atoll NDSA, and the Wake Island NDSA has also been suspended until further notice.

The Navy exerts jurisdiction over Farallon de Mendinilla in the CNMI and Ka'ula Rock in the main Hawaiian Islands, which are used as military bombing ranges. The Navy also exerts jurisdiction over a variety of waters offshore from military ports and air bases in Hawaii, PRIAs, Guam, and the CNMI.

### **9.3.6 Issues**

Claims between "state" and federal resource management agencies involving marine boundaries over individual islands, reefs and atolls, continue to be unresolved in the Western Pacific Region. Tables 9.2 through 9.4 summarize these various claims.

#### *Northwestern Hawaiian Islands*

The NWHI are primarily uninhabited atolls, islands, banks and shoals and are currently under multi-agency jurisdiction including the State of Hawaii, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the Western Pacific Regional Fishery Management Council. Overlaps in jurisdiction and the varying regulatory authorities embodied in the management of this area can create numerous challenges and has led to contention regarding access and use for the region.

The State of Hawaii claims jurisdiction of all submerged lands from the shoreline to the extent of the State's jurisdiction in the NWHI. In accordance with the Hawaii Organic Act of April 30,

1900, c 339, 31 Stat 141 Section 2, and the Hawaii Admissions Act of March 18, 1959, Pub L 86-3, 73 Stat 4 Section 2, the Islands of the Hawaiian Archipelago, together with their appurtenant reefs and territorial waters, with the exception of Midway Atoll, are part of the territory of Hawaii and are managed by the State of Hawaii including all submerged lands and marine resources. The State of Hawaii, Department of Land and Natural Resources has stewardship responsibility for managing, administering and exercising control over the coastal and submerged lands, ocean waters and marine resources under State jurisdiction around each of the Northwestern Hawaiian Islands under Title 12, Chapter 171.3 Hawaii Revised Statutes. Under an Executive Order issued by President Truman, the emergent lands at Kure Atoll are also managed as a State Wildlife Refuge.

In addition to the State of Hawaii, the USFWS also claims jurisdiction over atolls, islands, banks and shoals in the NWHI. Following the Hawaii Admissions Act of March 18, 1959, federal agencies were directed to inventory all lands for which there was a continuing need. The USFWS in 1963, reported a continuing need of 1,765 acres of land in the NWHI. This area consisted of only the emergent land in the NWHI as was claimed by the Department of Agriculture as the original boundary of the Hawaiian Island Refuge (Yamase 1982). More recently however, the USFWS claims that the HINWR includes 252,000 acres of submerged lands based on their interpretation of the terms "reef and inlets" contained in Executive Order 1019 (U.S. Fish and Wildlife Service 1986). Within the HINWR, the USFWS asserts management authority over coral reef resources to a depth of 10 fathoms around all islands with the exception of Necker Island where it asserts a 20 fathom boundary. The USFWS acknowledges that all HINWR islands are part of the State of Hawaii, but asserts that the islands are federally owned and administered as a NWR by the USFWS (U.S. Fish and Wildlife Service 1999, Smith 2000). Other jurisdictional disputes also involve East and Tern Islands in French Frigate Shoals.<sup>5 6</sup>

Issues have developed from a series of directives from President Clinton that focused public attention on protection of U.S. coral reef ecosystems. Executive Order 13089, Coral Reef Protection, issued in June 1998, requires agencies to (1) identify actions that may affect U.S.

---

<sup>5</sup>In 1940, Territorial Governor Poindexter, issued an Executive Order in concurrence with the President of the U.S. to set aside East Island, for the use and purpose of the United States as a radar station communication base under the DOC (Yamase 1982). Prior to statehood, the DOC returned East Island to the Territory of Hawaii (Yamase 1982). However, the DOI contends that East Island was part of the HIR as established by Executive Order 1019 in 1909 and later transferred to the DOI in 1939. Therefore, East Island remains included in the HINWR and under authority of DOI.

<sup>6</sup> Tern Island was expanded from 11 to 37 acres in 1942 by military dredging (Yamase 1982). In 1948, the Navy conveyed Tern Island to the Territory of Hawaii which then permitted the U.S. Coast Guard in 1952 to establish a navigational Loran station (Yamase 1982). In 1979, USCG operations were terminated and the Hawaii State Legislature adopted resolutions requesting the Governor to take immediate action to acquire and return Tern Island for use as a fishing base to support commercial activities (Yamase 1982). The Federal government asserts that it retains jurisdiction over Tern Island based on Executive Order 1019 and that the Navy did not have the authority to legally convey title to the Territory of Hawaii, therefore, the conveyance is void (Yamase 1982).

coral reef ecosystems; (2) use their programs and authorities to protect and enhance the condition of such ecosystems; and (3) ensure that any actions they authorize, fund, or carry out will not degrade the conditions of coral reef ecosystems. Agencies whose actions affect U.S. coral reef ecosystems must provide for implementation of measures needed to research, monitor, manage and restore affected ecosystems, including, but not limited to, measures reducing impacts from pollution, sedimentation, and fishing. The E.O. also established the U.S. Coral Reef Task Force composed of the heads of 11 federal agencies and the Governors of the seven states, territories, or commonwealths with responsibilities for coral reefs. In March 2000, the Task Force issued the National Action Plan to Conserve Coral Reefs, which presents a cohesive national strategy to implement EO 13089.

In May 2000, the President issued a Memorandum stating that it is time to implement the Coral Reef Task Force's recommendations in order to comprehensively protect the coral reef ecosystem of the NWHI.<sup>7</sup> The Memorandum directed the Secretaries of Interior and Commerce, in cooperation with the State of Hawaii, and in consultation with the WPRFMC, to develop recommendations for a new, coordinated management regime to increase protection for the NWHI coral reef ecosystem and provide for sustainable use. After considering their recommendations and comments received during the public visioning process on this initiative, President Clinton issued Executive Order 13178 on December 4, 2000, establishing the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve, pursuant to the National Marine Sanctuaries Amendments Act of 2000 (NMSA). The EO was revised and finalized by Executive Order 13196, issued January 18, 2001. Pursuant to Executive Order 13178 and the NMSA, NOAA is initiating the process to designate the Reserve as a national marine sanctuary (66 FR 5509, January 19, 2001). These actions to protect the coral reef ecosystem of the NWHI and provide for sustainable use of the area underscore the immediate need for a comprehensive assessment of the impacts of fishing activity on this ecosystem.

Because the final rules for the Reserve have not yet been published, and an EIS will be prepared for the marine sanctuary, a comprehensive analysis of the impact of the Reserve can not be completely assessed at this time. Preliminary potential impacts to the human environment are addressed in the environmental consequences section of the EIS. However, two alternatives considered by the EIS (3 and 4, described in Chapter 2) are consistent with the concept of establishing marine reserves in the NWHI, as described in the CRE-FMP.

The USFWS and the Council have different opinions about primary fishery management responsibilities in EEZ waters within NWR boundaries. Since the late 1960s, citing USFWS interim administrative policy and interpretation of Executive Order 1019, the USFWS ha

---

<sup>7</sup> The President's directive coincided with Executive Order 13158, which requires federal agencies to establish a comprehensive national network of marine protected areas throughout U.S. marine waters. The Executive Order calls for expansion of the nation's MPA system to include examples of all types of marine ecosystems. According to the executive order, a MPA means any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or has regulations to provide lasting protection for part or all of the natural and cultural resources therein.

asserted that they would enforce refuge regulations within the “de facto” boundaries of the HINWR, which include all emergent land and their surrounding waters out to a depth of 10 fm for all islands and later 20 fm around Necker Island (Smith 2000b). Under the authority of the MSFCMA, the Council promulgated fishery regulations within federal waters that correspond with USFWS refuge boundaries of 0-10 fathoms within NWHI federal waters, except at Necker where it is 20 fm (WPRFMC 1986). The Council recognizes state waters in the NWHI from 0-3 miles and asserts management authority over fishery resources in all federal waters (3-200 miles), except at Midway where it asserts authority from 0-200 miles (Gillman 2000).

### *Main Hawaiian Islands*

The State of Hawaii claims jurisdiction beyond its territorial seas of 0-3 nautical miles by claiming archipelagic status over channel waters between the main Hawaiian islands (MacDonald and Mitsuyasu, 2000). The Federal Government does not recognize the State’s claim of archipelagic jurisdiction, but interprets the State’s seaward authority to stop at three nautical miles from the baseline (Feder 1997; MacDonald and Mitsuyasu 2000). The authority of the Magnuson Act therefore, begins at 3 miles from the shoreline around all main Hawaiian islands in the State of Hawaii. However the State of Hawaii does not agree with this interpretation.

### *American Samoa*

The legal relationship between the Territory of American and the U.S. with regard to fisheries management is unresolved due to a discrepancy in the wording of the deeds of cession signed by the chiefs of what is now American Samoa and the law enacted by Congress which extended U.S. sovereignty over the eastern Samoa islands in 1900. Language contained in the deeds of cession signed by the chiefs of Tutuila district state that they ceded, transferred and yielded up “all these islands of Tutuila and Aunu’u and all other islands, rocks, reefs, foreshores and waters lying between the 13<sup>th</sup> degree and the 15<sup>th</sup> degree of south latitude and between the 171<sup>st</sup> degree and 167<sup>th</sup> degree of west longitude....” Likewise, the chiefs of the Manu’a Islands also ceded to the U.S. “the whole of eastern portion of the Samoan Islands lying east of 171 degrees west of Greenwich and known as Tau, Olosega, Ofu and Rose Islands, and all other , the waters and property adjacent thereto....”

In contrast, Title 48 United States Code, Section 661, by which Congress accepted, confirmed and ratified these cessions by the chiefs, refer only to the islands, and not to the reefs, foreshores and waters or property adjacent lying between the referenced coordinates. Whether Congress deliberately or unintentionally failed to extend sovereignty over reef and ocean waters transferred by the chiefs of Tutuila and Manu’a is uncertain.

A central premise for ceding eastern Samoa to the U.S. was to preserve the rights and property of the islands’ inhabitants. Additionally, American Samoa’s constitution makes it government policy to protect persons of Samoan ancestry from the alienation of their lands and the destruction of the Samoan way of life and language and to encourage business enterprise among

persons of Samoan ancestry. Therefore, any federal actions within the EEZ waters of American Samoa that would stymie these rights, including restriction on fishing, may be perceived to be contrary to American Samoa's constitution.

### *CNMI*

Currently, the EEZ includes all waters surrounding CNMI from shore out to 200 miles. However, through the legal system CNMI is pursuing a claim that the Commonwealth is vested authority out to 12 miles from the archipelagic baseline. The Council, for the purposes of fisheries management, defers management in waters 0-3 nm to the CNMI while managing fishery resources 3-200 nm.

### *Guam*

The Territory of Guam questions the legality of the transference of the Ritidian Unit from the Navy to the USFWS. In its property inventory to the General Services Administration the Navy listed the Ritidian Unit as excess lands, not of continual need and available for reversion to the Territory. The area represents ancestral lands of Chamorro families. Therefore, the Territory asserts that the fee title should not have been transferred to the USFWS (J. Guthertz pers. comm.).

In 1976, the Federal Fishery Conservation Zone (later known as the EEZ) was extended to 200 nmi around Guam which gave the federal government authority to manage marine resources within the EEZ. In 1980, the Guam Legislature passed and the Governor signed legislation providing for a 200 mile territorial limit for Guam (DOI 1993). The purpose of this legislation, was to allow the government of Guam to sell foreign fishing rights within Guam's EEZ. In 1996, the Magnuson-Stevens Act authorized the Secretary of State to negotiate foreign fishing agreements for fishing within the EEZ at the request of the Governor of Guam. However, in addition to the "state" waters around Guam, the government has also expressed a continuing interest in obtaining greater authority in managing the EEZ surrounding Guam.

### *PRIAs*

In the PRIAs, primary jurisdiction over nearshore fisheries is an ongoing issue between the Department of the Interior and the Department of Commerce. Management authority is currently unresolved because no clear baseline boundary has been designated from which the seaward boundary of the PRIAs are measured. Seaward boundaries are not clearly defined because some islands in the PRIAs do not appear to have a seaward boundary as defined by U.S. law (i.e., MSFCMA) (Beuttler 1995). For this reason, jurisdictional boundaries have been claimed by federal agencies in terms of fathoms, miles, or the territorial sea. Furthermore, it is recognized that various Executive orders have given administrative authority of the PRIAs to either the DOD or DOI. However, Executive orders themselves do not convey title of submerged lands, unless specifically stated. In any case, based on tentative interpretation by the NOAA legal counsel, MSFCMA authority applies to all marine waters around federally owned possessions (i.e., PRIAs), including marine resources within bays, inlets, and other marine waters to the shoreline (Beuttler 1995).

Additionally, because the NWRSAA does not explicitly authorize the President to withdraw land for a wildlife refuge, the DOI argues that the President could rely on the implied authority to reserve public lands recognized in *United States v. Midwest Oil Co.* 236, U.S. 459 (1915). However, since the Federal Land and Policy Act of 1976 repealed the President's authority, effective on and after approval of the Act, to make withdrawals and reservations resulting from the acquiescence of Congress (*U.S. v. Midwest Oil Co.*), it appears that since 1976 the President has not had the authority to establish or expand a wildlife refuge within the U.S. territorial sea (12 miles) or the EEZ using presidential authority recognized in *Midwest Oil* (Moss 2000). This could call into question asserted marine boundaries of any NWRs established after enactment of the FLPMA.



**Table 9.2: Marine boundary claims by various jurisdictions in the Western Pacific Region. Note: a dashed line (-) indicates no jurisdiction.**

Island or Area	State/Commonwealth/ Territory	Department of Commerce	Department of the Interior and Department of Defense (as noted)
<b>PRIAs</b>			
Howland I.	-	WPRFMC/NMFS 0-200 nm	USFWS: 0-3 nm
Baker I.	-	WPRFMC/NMFS 0-200 nm	USFWS: 0-3 nm
Jarvis I.	-	WPRFMC/NMFS 0-200 nm	USFWS: 0-3 nm
Johnston I.*	-	WPRFMC/NMFS 0-200 nm	USFWS/US Navy: 0-3 nm
Kingman R.	-	WPRFMC/NMFS 0-200 nm	USFWS: 0-12 nm <sup>1</sup>
Palmyra A.*	-	WPRFMC/NMFS 0-200 nm	USFWS: 0-12 nm <sup>2</sup>
Wake I.***	-	WPRFMC/NMFS 0-200 nm	DOI/USArmy: 0-3 nm
Midway A.*	-	WPRFMC/NMFS 0-200 nm	USFWS: 22x22 nm quad
<b>Hawaii</b>			
MHI	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	
Nihoa I.	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	USFWS: 0-10 fm**
Necker I.	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	USFWS: 0-20 fm**

<sup>1</sup> Boundary formerly 0-3 miles under the jurisdiction of the U.S. Navy. Secretarial Order 3223 extended Department of the Interior's jurisdiction to 12 nm.

<sup>2</sup> Secretarial Order 3224 (Palmyra Atoll) extended USFWS administrative authority from 3 to 12 nm.

\*At Palmyra, Johnston, and Midway special permit fishing is only for recreational and on-island consumption; at Midway, the northern half of the atoll would be a no-take MPA and the southern half a low-use MPA.

\*\*USFWS boundary begins at the shoreline; legally defined outer boundary of the Hawaiian Islands NWR is unresolved.

\*\*\* As of 1962, the jurisdiction over Wake Island has been vested with the Department of the Interior. Since 1994, the Department of the Army has maintained administrative use of Wake Island.

Table 9.2 (cont.)

Island or Area	State/Territory/Commonwealth	Department of Commerce	Department of the Interior and Department of Defense (as noted)
FFS	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	USFWS: 0-10 fm**
Gardner Pinnacles	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	USFWS: 0-10 fm**
Maro R.	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	USFWS: 0-10 fm**
Laysan I.	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	USFWS: 0-10 fm**
Lisianski I.	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	USFWS: 0-10 fm**
Pearl and Hermes R.	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	USFWS: 0-10 fm**
Kure A.	Hawaii: 0-3 nm	WPRFMC/NMFS 3-200 nm	-
Guam	Guam: 0-3 nm	WPRFMC/NMFS 3-200 nm	
Ritadan Unit			USFWS: 100 ft. isobath
CNMI	CNMI: 0-3 nm***	WPRFMC/NMFS 3-200 nm	
American Samoa	American Samoa: 0-3 nm	WPRFMC/NMFS 3-200 nm	
Rose Atoll		WPRFMC/NMFS 0-200 nm	USFWS: 0-3 nm <sup>3</sup>

<sup>3</sup>At Rose Atoll, the Department of the Interior/U.S. Fish and Wildlife Service has a cooperative agreement with the Territory of American Samoa to manage the atoll as a national wildlife refuge, and shares jurisdiction with the Department of Commerce.

\*\*USFWS boundary begins at the shoreline; legally defined outer boundary of the Hawaiian Islands NWR is unresolved.

\*\*\*The CRE-FMP proposes to defer management in 0-3 nm to the CNMI while managing fisheries 3-200 nm.

**Table 9.3 : Comparison of No-take and Low-use Marine Protected Areas of the Coral Reef Ecosystem FMP with the NWHI Reserve Preservation Areas (RPAs), U.S. Fish and Wildlife Service and State/Commonwealth/Territory (a dash indicates no jurisdiction).**

Island or Area	CRE-FMP	NWHI Reserve	USFWS	State/Commonwealth/Territory
<b>PRIAs</b>				
Howland I.	No-take zone 0-50 fathoms.	-	Howland Island NWR 0 to 3 nm; No fishing allowed.	-
Baker I.	No-take zone 0-50 fathoms.	-	Baker Island NWR 0 to 3 nm; No fishing allowed.	-
Jarvis I.	No-take zone 0-50 fathoms.	-	Jarvis Island NWR 0 to 3 nm; No fishing allowed.	-
Johnston I.	Low-use special permit zone 0-50 fathoms.	-	Johnston Atoll NWR/Navy (Overlay Refuge) 0 to 3 nm; Recreational fishing program.	-
Kingman R.	No-take zone 0-50 fathoms.	-	Kingman Reef NWR 0 to 12 nm; No fishing allowed.	-
Palmyra A.	Low-use special permit zone 0-50 fathoms.	-	Palmyra Atoll NWR 0 to 12 nm; Recreational fishing allowed.	-
Wake I.	Low-use special permit zone 0-50 fathoms.	-	DOI/US Army to 3 nm; Fishing allowed.	-
Midway A.	No-take zone 0-50 fathoms around northern half of Midway. Low-use special permit zone around southern half of Midway.	-	Midway Atoll NWR between 28°5' and 28°25'; 177°10' and 177°30'; following fishing allowed within Refuge boundaries:  1 lobster/person/day; pelagic rec and charter fishing allowed; no bottomfishing; catch and release ulua fishing.	-

Table 9.3 (cont)

Island or Area	CRE-FMP	NWHI Reserve	USFWS	State/Commonwealth/Territory
<b>Hawaii</b>				
MHI	Special permits for "potentially harvested" species.	-	10 wildlife refuges (none with marine boundaries)	State of Hawaii bottomfish area closures (20 closures across MHI); 10 Marine Life Conservation Districts and 14 Marine Fishery Management Areas in MHI (rules and regulations vary with location)
Nihoa I.	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms around Nihoa and nearby banks.	RPA extends from the seaward boundary of Hawaii State waters (3nm) out to a mean depth of 100 fathoms. Bottomfish and recreational trolling for pelagics permitted seaward of 25 fathoms.	Hawaiian Islands NWR (HINWR) 0 to 10 fathoms. No fishing allowed.	State of Hawaii proposed NWHI Marine Fisheries Management Area (NWHI FMA) 0-3 miles.
Misc. banks around Nihoa and Necker (8)	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	no current restrictions	HINWR 0 to 10 fathoms. No fishing allowed.	-
Necker	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA extends from the seaward boundary of Hawaii State waters (3nm) out to a mean depth of 100 fathoms. Bottomfish and recreational trolling for pelagics permitted seaward of 25 fathoms.	HINWR 0 to 20 fathoms. No fishing allowed.	State of Hawaii proposed NWHI Marine Fisheries Management Area (NWHI FMA) 0-3 miles.
Unnamed bank east of French Frigate Shoal	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA to 12 nm from geographic center. No fishing allowed.	HINWR 0 to 10 fathoms. No fishing allowed.	-

Table 9.3 (cont)

Island or Area	CRE-FMP	NWHI Reserve	USFWS	State/Commonwealth/Territory
FFS	No-take zone 0-50 fathoms.	RPA extends from the seaward boundary of Hawaii State waters (3nm) out to a mean depth of 100 fathoms. No fishing allowed.	HINWR 0 to 10 fathoms. No fishing allowed.	State of Hawaii proposed NWHI Marine Fisheries Management Area (NWHI FMA) 0-3 miles.
Brooks Banks (2)	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms around three banks southeast of St. Rogatien including two Brooks Banks and one bank NW of St. Rogatien.	RPA to 12 nm from geographic center of southeast Brooks Bank, but not closer than 3 nm to the next bank west (northwest Brooks Bank). No fishing allowed.	HINWR 0 to 10 fathoms. No fishing allowed.	-
St. Rogatien Bank	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA to 12 nm from geographic center, but not closer than 3 nm to the next bank east. Bottomfish and recreational trolling for pelagics permitted.	HINWR 0 to 10 fathoms. No fishing allowed.	-
Unnamed bank between Gardner Pinnacles and St. Rogatien Bank	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA to 12 nm from geographic center. Bottomfish and recreational trolling for pelagics allowed for 5 years from order.	HINWR 0 to 10 fathoms. No fishing allowed.	-
Gardner Pinnacles	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA extends from the seaward boundary of Hawaii State waters (3nm) out to a mean depth of 100 fathoms. Bottomfish and recreational trolling for pelagics permitted seaward of 25 fathoms.	HINWR 0 to 10 fathoms. No fishing allowed.	State of Hawaii proposed NWHI Marine Fisheries Management Area (NWHI FMA) 0-3 miles.

Table 9.3 (cont)

Island or Area	CRE-FMP	NWHI Reserve	USFWS	State/Commonwealth/Territory
Raita Bank	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA to 12 nm from geographic center. Bottomfish and recreational trolling for pelagics allowed for 5 years from order.	HINWR 0 to 10 fathoms. No fishing allowed.	-
Maro R.	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA extends from the seaward boundary of Hawaii State waters (3nm) out to a mean depth of 100 fathoms. Bottomfish and recreational trolling for pelagics permitted seaward of 25 fathoms.	HINWR 0 to 10 fathoms. No fishing allowed.	State of Hawaii proposed NWHI Marine Fisheries Management Area (NWHI FMA) 0-3 miles.
Laysan I.	No-take zone 0-50 fathoms. (Crustaceans FMP: Lobster fishing prohibited to 20 nm from geographic center)	RPA extends from the seaward boundary of Hawaii State waters (3nm) out to a mean depth of 100 fathoms. Bottomfish and recreational trolling for pelagics permitted seaward of 50 fathoms.	HINWR 0 to 10 fathoms. No fishing allowed.	State of Hawaii proposed NWHI Marine Fisheries Management Area (NWHI FMA) 0-3 miles.
Misc banks near (SW of) Laysan (4)	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	No current restrictions.	HINWR 0 to 10 fathoms. No fishing allowed.	-
Pioneer Bank	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	Preservation Area to 12 nm from geographic center. Bottomfish and recreational trolling for pelagics permitted.	HINWR 0 to 10 fathoms. No fishing allowed.	-

Table 9.3 (cont)

Island or Area	CRE-FMP	NWHI Reserve	USFWS	State/Commonwealth/Territory
Lisianski I.	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA extends from the seaward boundary of Hawaii State waters (3nm) out to a mean depth of 100 fathoms. Bottomfish and recreational trolling for pelagics permitted seaward of 25 fathoms.  No current restrictions.	HINWR 0 to 10 fathoms. No fishing allowed.	State of Hawaii proposed NWHI Marine Fisheries Management Area (NWHI FMA) 0-3 miles.
Misc banks near (W of) Lisianski (2)	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	No current restrictions.	HINWR 0 to 10 fathoms. No fishing allowed.	-
Pearl and Hermes R.	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA extends from the seaward boundary of Hawaii State waters (3nm) out to a mean depth of 100 fathoms. No fishing allowed.  No current restrictions.	HINWR 0 to 10 fathoms. No fishing allowed.	State of Hawaii proposed NWHI Marine Fisheries Management Area (NWHI FMA) 0-3 miles.
Misc. banks in the vicinity of Kure, Midway and Pearl and Hermes (4)	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	No current restrictions.	HINWR 0 to 10 fathoms. No fishing allowed.	-
Kure A.	No-take MPA in federal waters shallower than 10 fathoms. Low-use special permit zone 10-50 fathoms.	RPA extends from the seaward boundary of Hawaii State waters (3nm) out to a mean depth of 100 fathoms. No fishing allowed.	-	State of Hawaii Wildlife Refuge shoreline to 3 nm. Fishing not prohibited.

Table 9.3 (cont)

Island or Area	CRE-FMP	NWHI Reserve	USFWS	State/Commonwealth/Territory
<b>American Samoa</b>				
Rose Atoll	No-take zone 0-50 fathoms.	-	Rose Atoll NWR 0 to 3 nm; no fishing allowed.	DOI has a cooperative agreement with the Territory of American Samoa to manage Rose Atoll as a national wildlife refuge and shares jurisdiction with DOC
<b>Guam</b>				
Ritadan Unit	-	-	Ritidian Unit 0 to 100 foot contour. Recreational fishing allowed	-
<b>CNMI</b>	-	-	-	-



**Table 9.4: Comparison of Resource Management Authorities and Fishery Management Measures for Coral Reef Ecosystems in Federal Waters of the Western Pacific Region.**

<b>NIHOA, NECKER, GARDNER, MARO, LISIANSKI (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>NWHI Coral Reef Ecosystem Reserve (Reserve)</b>  (Federal waters to 50 miles around all islands)	No fishing portion of RPA: Federal waters 0-25 fm.	No fishing.	None.
	Bottomfishing/trolling portion of RPA: Federal waters 25-100 fm.	Limited commercial bottomfishing by permit holders and limited commercial and recreational pelagic trolling (all subject to fishing caps based on catch history).	No anchoring in areas where mooring is available; no discharging of any material except cooling water or engine exhaust.
	Other Reserve waters: Federal waters 100 fm-50 miles.	Limited commercial and recreational fishing (all subject to fishing caps based on catch history).	No increase in level of effort or take; no change in gear type or species targeted.
<b>CRE FMP</b> Federal waters to 200 miles	No-take MPA: Federal waters 0-10 fm.	No fishing.	Insurance requirement.
	Low-use MPA: Federal waters 10-50 fm.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders.	CRE special permit needed to target <u>any</u> coral reef ecosystem resources, insurance requirement.
	Non-MPA: Federal waters 50 fm-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> Federal waters to 10 fathoms [0-20 at Necker]	Refuge: Federal waters 0-10 fathoms [0-20 at Necker].	Activities consistent with Refuge mission- no commercial fishing.	USFWS special use permit required to enter.

*Distinguishing Characteristics (this is the most common scenario):*

**NWHI Reserve**

Reserve Preservation Area (RPA)  
No fishing RPA 0-25 fm  
Fishing RPA 25-100 fm  
Recreational fishing 100 fm - 50 miles

**CRE FMP**

Marine Protected Area (MPA)  
No-take MPA 0-10 fm  
Low-take MPA 10-50 fm  
Non-MPA 50 fm-200 miles

**USFWS**

Refuge 0-10 fm, 0-20 fm at Necker (no fishing)

<b>NIHOA, NECKER, GARDNER, MARO, LISIANSKI (details)</b>			
<b>Federal waters</b>	<b>NWHI Reserve</b>	<b>CRE FMP</b>	<b>USFWS</b>
0-10 fathoms	No fishing (RPA).	No fishing, insurance requirement (No-take MPA).	No fishing (Refuge). Beyond 10 fathoms, no current restrictions.
10-25 fathoms	No fishing (RPA).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>any</u> coral reef ecosystem resources, insurance requirement (Low-use MPA).	No fishing 0-20 fm at Necker (Refuge). Beyond 20 fm no current restrictions.
25-50 fathoms	Limited bottomfish and pelagic trolling by current permit holders; limited recreational trolling for pelagic (RPA).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>any</u> coral reef ecosystem resources, insurance requirement (Low-use MPA).	No current restrictions.
50-100 fathoms	Limited bottomfish and pelagic trolling by current permit holders; limited recreational trolling for pelagic (RPA).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
100 fm-50 miles	Recreational fishing commercial fishing by bottomfish permit holders; all pelagic trollers (Reserve).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
50 - 200 miles	Outside of Reserve.	Lobster, bottomfish, precious corals, troll/handline and longline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.

<b>FRENCH FRIGATE SHOALS (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>NWHI Coral Reef Ecosystem Reserve</b> (Federal waters to 50 miles)	Entire no fishing RPAs: Federal waters 0-100 fm.	No fishing.	None.
	Other Reserve Areas: Federal waters 100 fm to 50 miles.	Limited commercial bottomfishing by permit holders and limited commercial and recreational pelagic trolling (all subject to fishing caps based on catch history).	No anchoring in areas where mooring is available; no discharging of any material except cooling water or engine exhaust.
<b>CRE FMP</b> Federal waters to 200 miles	No-take MPA: Federal waters 0-50 fm.	Limited commercial and recreational fishing (all subject to fishing caps based on catch history).	No increase in level of effort or take; no change in gear type or species targeted.
	Non-MPA: Federal waters 50 fm-50 miles.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
	Non-MPA: Federal waters 50-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> Federal waters to 10 fathoms	Refuge: Federal waters 0-10 fm.	Activities consistent with Refuge mission-no commercial fishing.	USFWS special use permit required to enter.

*Distinguishing characteristics:*

**CRE FMP**

**NWHI Reserve**

- (1) No-take MPA from 0-50 fathoms.      (2) No fishing RPAs extend from 0-100 fathoms.

<b>FRENCH FRIGATE SHOALS (details)</b>			
<b>Federal waters</b>	<b>NWHI Reserve</b>	<b>CRE FMP</b>	<b>USFWS</b>
0-10 fathoms	No fishing (RPA).	No fishing, insurance requirement (No-take MPA).	No fishing (Refuge).
10-50 fathoms	No fishing (RPA).	No fishing, insurance requirement (No-take MPA).	No current restrictions beyond 10 fm.
50-100 fathoms	No fishing (RPA).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
100 fm-50 miles	Recreational fishing, commercial fishing by bottomfish permit holders, and all pelagic trollers (Reserve).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
50 - 200 miles	Outside of Reserve.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.

**S.E. BROOKS BANK, 1<sup>ST</sup> BANK EAST OF FFS, ST. ROGATIEN,  
1<sup>ST</sup> BANK WEST OF ST. ROGATIEN\*, RAITA\*, PIONEER (summary)**

<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>NWHI Coral Reef Ecosystem Reserve</b> (Federal waters to 50 miles around all islands)	Bottomfishing/trolling RPA: Federal waters 0 - 12 miles.  (All fishing is prohibited within 12 miles around S.E. Brooks Banks, and the 1 <sup>st</sup> bank west of FFS).	Limited commercial bottomfishing by permit holders and limited commercial and recreational pelagic trolling (all subject to fishing caps based on catch history).	No anchoring in areas where mooring is available; no discharging of any material except cooling water or engine exhaust.
	Other Reserve waters: Federal waters 12-50 miles.	Limited commercial and recreational fishing (all subject to fishing caps based on catch history).	No increase in level of effort or take; no change in gear type or species targeted.
<b>CRE FMP</b> Federal waters to 200 miles	No-take MPA: Federal waters 0-10 fm.	No fishing.	Insurance requirement.
	Low-use MPA: Federal waters 10-50 fm.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders.	CRE special permit needed to target <u>any</u> coral reef ecosystem resources, insurance requirement.
	Non-MPA: Federal waters 50 fm-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> Federal waters to 10 fathoms	Refuge: Federal waters 0-10 fm.	Activities consistent with Refuge mission- no commercial fishing.	USFWS special use permit required to enter.

*Distinguishing characteristics:*

**NWHI Reserve**

- (1) The NWHI EO fishing RPA extends from 0-12 miles;
- (2) All fishing is prohibited within 12 miles around S.E. Brooks Banks, and the 1<sup>st</sup> bank east of FFS.

\* Under the NWHI EO, the fishing RPAs at these banks will be reviewed after five years.

<b>S.E. BROOKS BANK, 1<sup>ST</sup> BANK EAST OF FFS, ST. ROGATIEN, 1<sup>ST</sup> BANK WEST OF ST. ROGATIEN, RAITA, PIONEER (details)</b>			
<b>Federal waters</b>	<b>NWHI Reserve</b>	<b>CRE FMP</b>	<b>USFWS</b>
0-10 fathoms	Limited bottomfish and pelagic trolling by current permit holders; limited recreational trolling for pelagic (RPA).	No fishing, insurance requirement (No-take MPA).	No fishing (Refuge).
10 - 50 fathoms	Limited bottomfish and pelagic trolling by current permit holders; limited recreational trolling for pelagic (RPA).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>any</u> coral reef ecosystem resources, insurance requirement (Low-use MPA).	No current restrictions beyond 10 fm.
50 fm-12 miles	Limited bottomfish and pelagic trolling by current permit holders; limited recreational trolling for pelagic (RPA).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
12 - 50 miles	Recreational fishing, commercial fishing by bottomfish permit holders, and all pelagic trollers (Reserve).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
50 - 200 miles	Outside of Reserve.	Lobster, bottomfish, precious corals, troll/handline and longline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.

Note: All fishing is prohibited within 12 miles around S.E. Brooks Banks, and the 1<sup>st</sup> bank east of FFS.

<b>LAYSAN (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>NWHI Coral Reef Ecosystem Reserve</b> (Federal waters to 50 miles around all islands)	No fishing portion of RPA: Federal waters 0-50 fm.	No fishing.	None.
	Bottomfishing/trolling portion of RPA: Federal waters 50-100 fm.	Limited commercial bottomfishing by permit holders and limited commercial and recreational pelagic trolling (all subject to fishing caps based on catch history).	No anchoring in areas where mooring is available; no discharging of any material except cooling water or engine exhaust.
	Other Reserve waters: Federal waters 100 fm-50 miles.	Limited commercial and recreational fishing (all subject to fishing caps based on catch history).	No increase in level of effort or take; no change in gear type or species targeted.
<b>CRE FMP</b> Federal waters to 200 miles	No-take MPA: Federal waters 0-50 fm.	No fishing.	Insurance requirement.
	Non-MPA Federal waters 50 fm-20 miles.	Bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders (no lobster fishing).	CRE special permit needed to target potentially harvested coral reef taxa.
	Non-MPA: Federal waters 50 fm-50 miles.	Lobster*, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
	Non-MPA: Federal waters 50-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> Federal waters to 10 fathoms	Refuge: Federal waters 0-10 fm.	Activities consistent with Refuge mission- no commercial fishing.	USFWS special use permit required to enter.

*Distinguishing characteristics:*

**CRE FMP**

- (1) no-take MPA from 0-50 fathoms.
- (2) \*Crustacean FMP prohibits lobster fishing from 0- 20 miles.

**USFWS**

- (1) assert HINWR also includes State waters 0-10 fm.

<b>LAYSAN (details)</b>			
<b>Federal waters</b>	<b>NWHI Reserve</b>	<b>CRE FMP</b>	<b>USFWS</b>
0-10 fathoms	No fishing (RPA).	No fishing, insurance requirement (No-take MPA).	No fishing (Refuge).
10-50 fathoms	No fishing (RPA).	No fishing, insurance requirement (No-take MPA).	No current restrictions beyond 10 fm.
50-100 fathoms	Limited bottomfish and pelagic trolling by current permit holders; limited recreational trolling for pelagic (RPA).	Bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
100 fm-50 miles	Recreational fishing, commercial fishing by bottomfish permit holders, and all pelagic trollers (Reserve).	Lobster*, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
50 - 200 miles	Outside of Reserve.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.

\*Crustacean FMP prohibits lobster fishing from 0- 20 miles at Laysan.



<b>PEARL &amp; HERMES REEF (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>NWHI Coral Reef Ecosystem Reserve</b> (Federal waters to 50 miles)	Entire no fishing RPA: Federal waters 0-100 fm.	No fishing.	None.
	Other Reserve waters: Federal waters 100 fm-50 miles.	Limited commercial and recreational fishing (all subject to fishing caps based on catch history).	No increase in level of effort or take; no change in gear type or species targeted.
<b>CRE FMP</b> Federal waters to 200 miles	No-take MPA: Federal waters 0-10 fm.	No fishing.	Insurance requirement.
	Low-use MPA: Federal waters 10-50 fm.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders.	CRE special permit needed to target <u>any</u> coral reef ecosystem resources, insurance requirement.
	Non-MPA: Federal waters 50 fm-50 miles.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
	Non-MPA: Federal waters 50-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> Federal waters to 10 fathoms	Refuge: Federal waters 0-10 fm.	Activities consistent with Refuge mission- no commercial fishing.	USFWS special use permit required to enter.

*Distinguishing characteristics:*

**NWHI Reserve**

(1) No fishing RPAs extend from 0-100 fathoms.

<b>PEARL &amp; HERMES REEF (details)</b>			
<b>Federal waters</b>	<b>NWHI Reserve</b>	<b>CRE FMP</b>	<b>USFWS</b>
0-10 fathoms	No fishing (RPA).	No fishing, insurance requirement (No-take MPA).	No fishing (Refuge).
10-50 fathoms	No fishing (RPA).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>any</u> coral reef ecosystem resources, insurance requirement (Low-use MPA).	No current restrictions beyond 10 fathoms.
50-100 fathoms	No fishing (RPA).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa , insurance requirement (Non-MPA).	No current restrictions.
100 fm-50 miles	Recreational fishing, commercial fishing by bottomfish permit holders, and all pelagic trollers (Reserve).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
50 - 200 miles	Outside of Reserve.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.

<b>MIDWAY (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>NWHI Coral Reef Ecosystem Reserve</b> (0-50 miles around all islands)	Midway Atoll NWR: approximately 22 x 22 miles around islands (not part of Reserve).	No restrictions.	None.
	Other Reserve waters: Federal waters approximately 22-50 miles.	Limited commercial and recreational fishing (all subject to fishing caps based on catch history).	No increase in level of effort or take; no change in gear type or species targeted.
<b>CRE FMP</b> 0 - 200 miles	No-take MPA: 0-50 fm in northern half of Refuge waters.	No fishing.	Insurance requirement.
	Low-use MPA: 0-50 fm in southern half of Refuge waters.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders.	CRE special permit needed to target <u>any</u> coral reef ecosystem resources - will be issued for recreational fishing for on-island consumption only, insurance requirement.
	Non-MPA: 50 fm-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permits.	CRE special permit needed to target potentially harvested coral reef taxa, insurance requirement.
<b>USFWS</b> approximately 22 x 22 mile square around islands	Refuge: approximately 22 x 22 miles around Midway.	Pelagic and lobster recreational and charter fishing permitted within refuge boundaries.	One lobster per person/day, all other catch and release unless record setting, USFWS special use permit required to enter.

*Distinguishing characteristics:*

**USFWS**

- (1) Refuge waters extend to 22 miles x 22 miles delineated by specific latitude/longitude coordinates;
- (2) Midway Atoll NWR not included as part of the NWHI CRE Reserve;
- (3) No State claims to territorial waters.

<b>MIDWAY (details)</b>			
<b>Waters</b>	<b>NWHI Reserve</b>	<b>CRE FMP</b>	<b>USFWS</b>
0-50 fathoms in northern half of Refuge waters	No restrictions.	No fishing, insurance requirement (No-take MPA).	Pelagic and lobster recreational and charter fishing (Refuge).
0-50 fathoms in southern half of Refuge waters	No restrictions.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>any</u> coral reef ecosystem resources - will be issued for recreational fishing for on-island consumption only, insurance requirement (Low-use MPA).	Pelagic and lobster recreational and charter fishing (Refuge).
50 fm - 22 miles	No restrictions.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	Pelagic and lobster recreational and charter fishing (Refuge).
22-50 miles	Recreational fishing, commercial fishing by bottomfish permit holders, and all pelagic trollers (Reserve).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	Outside of Refuge.
22 - 200 miles	No restrictions.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	Outside of Refuge.

<b>KURE (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>NWHI Coral Reef Ecosystem Reserve</b> (Federal waters to 50 miles around all islands)	Entire no fishing RPA: Federal waters 0 - 100 fm.	No fishing.	None.
	Other Reserve waters: Federal waters 100 fm-50 miles.	Limited commercial and recreational fishing (all subject to fishing caps based on catch history).	No increase in level of effort or take; no change in gear type or species targeted.
<b>CRE FMP</b> Federal waters to 200 miles	No-take MPA: Federal waters 0-10 fm.	No fishing.	Insurance requirement.
	Low-use MPA: Federal waters 10-50 fm.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders.	CRE special permit needed to target <u>any</u> coral reef ecosystem resources, insurance requirement.
	Non-MPA: Federal waters 50 fm-50 miles.	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
	Non-MPA: Federal waters 50-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> None	None.	No restrictions.	No restrictions.
<b>State of Hawaii</b> 0-3 miles	State Wildlife refuge: 0-3 miles from shore.	Fishing with a NWHI Taking Permit.	Hand harvest of lobsters permitted.

*Distinguishing characteristics:*

**State of Hawaii**

(1) Kure Atoll State Wildlife refuge, 0-3 miles.

<b>KURE (details)</b>			
<b>Waters</b>	<b>NWHI Reserve</b>	<b>CRE FMP</b>	<b>State of HI</b>
0-3 miles	Not part of Reserve.	No restrictions.	NWHI Taking Permit requirement.
0-10 fathoms (outside of state waters)	No fishing (RPA).	No fishing, insurance requirement (No-take MPA).	No current restrictions.
10-50 fathoms (outside of state waters)	No fishing (RPA).	Lobster, bottomfish, precious corals, troll/handline pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>any</u> coral reef ecosystem resources, insurance requirement (Low-use MPA).	No current restrictions.
50 - 100 fm (outside of state waters)	No fishing (RPA).	Lobster, bottomfish, precious corals, troll/handline and longline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
100 fm-50 miles (outside of state waters)	Recreational fishing, commercial fishing by bottomfish permit holders, and all pelagic trollers (Reserve).	Lobster, bottomfish, precious corals, troll/handline and longline pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No current restrictions.
50 - 200 miles	Outside of Reserve.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>potentially harvested coral reef taxa</u> (Non-MPA).	No current restrictions.

<b>Howland, Baker, Jarvis and Kingman Reef (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>CRE FMP</b> 0 - 200 miles	No-take MPA: 0-50 fm.	No fishing.	Insurance requirement.
	Non-MPA: 50 fm-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> 0 - 3 miles (0-12 miles at Kingman Reef)	Refuge: 0-3 miles 0-12 miles (Kingman).	Activities consistent with Refuge mission - no commercial fishing.	USFWS special use permit required to enter.

<b>Howland, Baker, Jarvis and Kingman Reef (details)</b>		
<b>Waters</b>	<b>CRE FMP</b>	<b>FWS</b>
0-50 fathoms	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>any</u> coral reef ecosystem resources will be issued for recreational fishing for on-island consumption only, insurance requirement (Low-use MPA).	No fishing (Refuge).
50 fm - 3 miles	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>potentially harvested coral reef taxa</u> (Non-MPA).	No fishing (Refuge).
3-12 miles	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>potentially harvested coral reef taxa</u> (Non-MPA).	No fishing (Kingman Reef NWR only).
12 - 200 miles	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>potentially harvested coral reef taxa</u> (Non-MPA).	Outside of Refuge.

<b>PALMYRA (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>CRE FMP</b> 0 - 200 miles	Low-use MPA: 0-50 fm.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target <u>any</u> coral reef ecosystem resources - will be issued for recreational fishing for on-island consumption only, insurance requirement.
	Non-MPA: 50 fm-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> 0 - 12 miles	Refuge: 0-12 miles.	Activities consistent with Refuge mission- no commercial fishing.	USFWS special use permit required to enter.

*Distinguishing characteristics:*

CRE FMP Low-use MPA 0-50 fathoms, harvest of CRE species w/special permit for recreational fishing for on island consumption only.

<b>PALMYRA (details)</b>		
<b>Waters</b>	<b>CRE FMP</b>	<b>FWS</b>
0-50 fathoms	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>any</u> coral reef ecosystem resources will be issued for recreational fishing for on-island consumption only, insurance requirement (Low-use MPA).	No commercial fishing (Refuge).
50 fm - 12 miles	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No commercial fishing (Refuge).
12 - 200 miles	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	Outside of Refuge.



<b>Johnston and Wake Atoll (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>CRE FMP</b> 0 - 200 miles	Low-use MPA: 0-50 fm.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target <u>any</u> coral reef ecosystem resources - will be issued for recreational fishing for on-island consumption only, insurance requirement.
	Non-MPA: 50 fm-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> 0 - 3 miles	Refuge: 0-3 miles.	Recreational fishing, activities consistent with Refuge mission- no commercial fishing.	USFWS special use permit required to enter.

*Distinguishing characteristics:*

CRE FMP Low-use MPA 0-50 fathoms, harvest of CRE species w/special permit for recreational fishing for on island consumption only

<b>Johnston and Wake Atoll (details)</b>		
<b>Waters</b>	<b>CRE FMP</b>	<b>FWS</b>
0-50 fathoms	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target <u>any</u> coral reef ecosystem resources will be issued for recreational fishing for on-island consumption only, insurance requirement (Low-use MPA).	No commercial fishing at Johnston Atoll (Refuge).
50 fm - 3 miles	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No commercial fishing at Johnston Atoll (Refuge).
3 - 200 miles	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	Outside of Refuge.

<b>AMERICAN SAMOA (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>Government of American Samoa</b> (Territorial waters 0-3 miles)	None.	Local regulations.	None.
<b>CRE FMP</b> Federal waters to 200 miles	No-take MPA: Federal waters 0-50 fathoms around Rose Atoll.	No fishing.	Insurance requirement.
	Non-MPA: Federal waters 3-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
<b>USFWS</b> Cooperative Agreement with American Samoa (0-3 miles at Rose Atoll NWR)	Refuge: (1) The area inside of the extreme low-water line around the seaward side of the atoll reef; (2) The lands and waters from the Refuge boundary out to 3 miles.	No fishing.	USFWS special use permit required to enter.

*Distinguishing characteristics:*

The USFWS has a cooperative agreement with the Territory of American Samoa to manage Rose Atoll as a National Wildlife Refuge, and the submerged lands and waters out to 3 miles around the refuge. Magnuson-Stevenson Act jurisdiction begins at the shoreline at Rose Atoll. Under the CRE-FMP Rose Atoll is designated as a no-take MPA from 0-50 fathoms.

<b>AMERICAN SAMOA (details)</b>			
<b>Waters</b>	<b>GOV'T OF A. SAMOA</b>	<b>CRE FMP</b>	<b>USFWS</b>
0-3 miles (except at Rose Atoll)	Local regulations.	No restrictions.	-
3-200 miles	No restrictions.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	-
0-50 fathoms around Rose Atoll	No fishing.	No fishing, insurance requirement (no-take MPA).	No fishing (Refuge).
50 fm-3 miles around Rose Atoll	No fishing.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No fishing (Refuge).

<b>COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>CRE FMP</b> 0-200 miles	Non-MPA: 0-3 miles.	No restrictions.	None.
	Non-MPA: 3-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.

*Distinguishing characteristics:*

There are no "state" (territorial) waters around CNMI. However, the CRE FMP will not impose any management measures within 0-3 miles from shore.

<b>COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS (details)</b>	
<b>Federal waters</b>	<b>CRE FMP</b>
0-3 miles	No restrictions (Non-MPA).
3-200 miles	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).

<b>GUAM (summary)</b>			
<b>Authority Jurisdiction</b>	<b>Subareas</b>	<b>Permitted activities</b>	<b>Special restrictions</b>
<b>Government of Guam</b> 0-3 miles	None.	Local regulations.	None.
<b>CRE FMP</b> Federal waters to 200 miles	Non-MPA: Federal waters 3-200 miles.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa.
	Non-MPA: Guam's Southern Banks.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders.	CRE special permit needed to target potentially harvested coral reef taxa , no anchoring by vessels greater than 50' in length.
<b>USFWS</b> Federal waters to 100 ft at Ritidian	Refuge: Federal waters 0-100 foot isobath.	Recreational fishing.	USFWS special permit required to enter.

*Distinguishing characteristics:*

There are no CRE MPAs around Guam, but there is an anchoring restriction for the Southern Banks for vessels larger than 50 ft in length.

<b>GUAM (details)</b>			
<b>Federal Waters</b>	<b>GOV'T OF GUAM</b>	<b>CRE FMP</b>	<b>USFWS</b>
0-3 miles	Local regulations.	No restrictions.	None.
0-10 fathoms (at Ritidian, outside of Guam waters)	No restrictions.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	No commercial fishing (Refuge).
10 fathoms-200 miles (outside of Guam waters)	No restrictions.	Lobster, bottomfish, precious corals, pelagic fishing by other FMP permit holders, CRE special permit needed to target potentially harvested coral reef taxa (Non-MPA).	-



# CHAPTER 10

## REFERENCES

- Adams, T., P. Dalzell and E. Ledua. 1999. Ocean resources (Chapter 30). *In*, The Pacific Islands; Environment and Society (M. Rapaport, Ed.). Bess Press, Honolulu, Hawaii.
- AECOS, Inc. 1983. Central and western Pacific regional fisheries development plan, vol. 2, Guam component. Prepared for the Pacific Basin Development Council, Honolulu, Hawaii.
- Agegian, C.R. and I.A. Abbott. 1985. Deep water macroalgal communities: a comparison between Penguin Bank, Hawaii and Johnson Island. Proceedings 5<sup>th</sup> International Coral Reef Congress, Tahiti 5: 46-50.
- Alcala, A.C. 1981. Fish yield of coral reefs of Sumilon Island, central Philippines. Bulletin of the National Research Council of the Philippines 36: 1-7.
- Alcala, A.C. and T. Luchavez. 1981. Fish yield of a coral reef surrounding Apo Island, central Visayas. Pages 69-73 *in* Proceedings of the Fourth International Coral Reef Symposium.
- Amesbury, S., F.A. Cushny and R.K. Sakamoto. 1989. Fishing on Guam. University of Guam Marine Laboratory Contribution 225. University of Guam Press, Manilao. Survey and Summaries of Traditional and Modern Fishing on Guam.
- Amesbury, S. and R.L. Hunter-Anderson. 1989. Native Fishing Rights and Limited Entry in Guam. A report by Micronesian Archaeological Research Services to the Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.
- Arias-Gonzales, J.E., R. Galzin, J. Nielson, R. Mahon and K. Aiken. 1994. Reference area as a factor affecting potential yield of coral reef fishes. NAGA, The ICLARM Quarterly 17(4): 37-40.
- Bank of Hawaii. 1997a. American Samoa Economic Report. Bank of Hawaii, Honolulu.
- Bank of Hawaii. 1997b. Commonwealth of the Northern Mariana Islands Economic Report. Bank of Hawaii, Honolulu.
- Bank of Hawaii. 1997c. Guam Economic Report. Bank of Hawaii, Honolulu.
- Bank of Hawaii. 1998. Hawaii 1998 Annual Economic Report. Vol. 47, Bank of Hawaii, Honolulu.

- Bayliss-Smith. 1988. The Role of Hurricanes in the Development of Reef Islands, Ontong Java Atoll, Solomon Islands. *Geographic* 154 (3): 377-391.
- Beckwith, M.W. 1951. *The Kumulipo: A Hawaiian Creation Chant*. New York, University of Chicago Press.
- Berkes, F. 1999. *Sacred ecology: Traditional Ecological Knowledge and Resource Management*. Philadelphia, Taylor and Francis.
- Beuttler, T.M. 1995. Draft Memorandum from Theodore M. Beuttler to Martin Hochman, NOAA Southwest Region Regional Counsel.
- Beverton, R.J.H. 1962. The long term dynamics of certain North Sea fish populations. Pages 242-259 *in* *The Exploitation of Natural Animal Populations*. British Ecological Society, Oxford.
- Birkeland, C., editor. 1997a. *Life and Death of Coral Reefs*. New York, Chapman and Hall.
- Birkeland, C. 1997b. Status of coral reefs in the Marianas. Pages 91-100 *in* Grigg, R.W. and C. Birkeland editors. *Status of Coral Reefs in the Pacific*. University of Hawaii Sea Grant College Program, Honolulu.
- Birkeland, C. 1997c. Symbiosis, fisheries and economic development on coral reefs. *Trends in Ecology and Evolution* 12: 364-67.
- Blaikie, P. and S. Jeanrenaud. 1996. *Biodiversity and Human Welfare*. Discussion Paper No. 72, United Nations Research Institute for Social Development, Geneva.
- Brown, B.E. 1997. Coral bleaching: causes and consequences. *In*, *Proceedings of the Eighth International Coral Reef Symposium* 1: 65-74.
- Bryant, D., L. Burke, J. McManus and M. Spalding. 1998. *Reefs at Risk: A Map-Based Indicator of Threats to the World's Coral Reefs*. Washington, D.C., World Resources Institute.
- Clark, A. and D. Gulko. 1999. *Hawaii's State of the Reefs Report, 1998*. Report to the Department of Land and Natural Resources, Honolulu, Hawaii.
- Cobb, J.N. 1902. Commercial fisheries of the Hawaiian Islands. U.S. Comm. Fish and Fish., Rep. Comm. Pt. 27: 381-499.
- Colchester, M. 1994. *Salvaging Nature: Indigenous Peoples, Protected Areas and Biodiversity Conservation*. Discussion Paper No. 55, United Nations Research Institute for Social Development, Geneva.



- Coles, R. and J. Kuo. 1995. Seagrasses. Pages 39-58 *in* Marine and Coastal Biodiversity in the Tropical Island Pacific Region (J.E. Maragos, M.N.A. Peterson, L.G. Eldredge, J.E. Bardach and H.F. Tekeuchi, Eds.). Vol. 1, Species systematics and information management priorities. The East-West Center, Honolulu, Hawaii.
- Craig, P., N. Daschbach, S. Wiegman, F. Curren, and J. Aicher. 1999. Workshop Report and Development of a 5-year plan for coral reef management in American Samoa (2000-2001). American Samoa Government. 28 p.
- Craig, P., S. Saucerman and S. Wiegman. In press. Central South Pacific Ocean (American Samoa). *In*, Seas at the Millennium: an Environmental Evaluation (C. Sheppard, Ed.).
- CRRF (Coral Reef Research Foundation). 2000. Coral Reef Research Foundation website.
- Dalzell, P. 1996. Catch rates, selectivity and yields of reef fishing. Pages 161-192 *in* Tropical Reef Fisheries (N.V.C. Polunin and C. Roberts, Eds.). Chapman & Hall, London.
- Dalzell, P. 1998. The role of archaeological and cultural-historical records in long range coastal fisheries resources management strategies and policies in the Pacific Islands. *Ocean and Coastal Management* 40: 237-252.
- Dalzell, P. and T. Adams. 1997. Sustainability and management of reef fisheries in the Pacific Islands. Pages 2027-2032 *in* Proceedings of the Eighth International Coral Reef Symposium.
- Dalzell, P., T.J.H. Adams and N.V.C. Polunin. 1996. Coastal fisheries in the Pacific islands. *Oceanography and Marine Biology: An Annual Review* 1996 34: 395-531.
- DBEDT (Department of Business Economic Development and Tourism). 1999. State of Hawaii Facts and Figures, 2000. Department of Business, Economic Development & Tourism, State of Hawaii, Honolulu.
- DeMartini, E., F. Parrish and J. Parrish 1996. Interdecadal change in reef fish populations at French Frigate Shoals and Midway Atoll, Northwestern Hawaiian Islands: statistical power in retrospect. *Bull Mar Sci* 58:804-25. Department of Commerce, 1996. Statistical Yearbook 1996. American Samoa Government. 185 pp.
- DeMartini, E.E., B.C. Mundy and J.J. Polovina. 1999. Status of nearshore sports and commercial fishing and impacts on biodiversity in the tropical insular Pacific. Pages 339-355 *in* Proceedings of the Workshop on Marine/Coastal Biodiversity in the Tropical Island Pacific Region (J.E. Maragos, M.N.A. Peterson, L.G. Eldredge, J.E. Bardach and H.F. Takeuchi, Eds.). East-West Center and Pacific Science Association, Honolulu, Hawaii.

- DOI (Department of the Interior), Office of the Solicitor. 1993. The Application of Federal Laws in American Samoa, Guam, the Northern Mariana Islands, The U.S. Virgin Islands. Volume 3- US Code Titles 40-50.
- Des Rochers, K. and F. Tuilagi. 1993. 1992 American Samoa Subsistence Fishing Survey. Report submitted to the Department of Marine and Wildlife Resources, Pago Pago, American Samoa.
- Ehrhardt, N.M. and D.J. Die. 1988. Selectivity of gill nets used in the commercial Spanish mackerel fishery of Florida. *Trans. Am. Fish. Soc.* 117: 574-580.
- EPAP (Ecosystem Principles Advisory Panel). 1999. Ecosystem-Based Fishery Management. A report to Congress as mandated by the Sustainable Fisheries Act amendments to the Magnuson-Stevens Fishery Conservation and Management Act of 1996. NMFS, Washington, D.C.
- Feder, J.J. 1997. Memorandum from Judson Feder, NOAA General Counsel, Southwest Region to Kitty Simonds, Executive Director of the Western Pacific Regional Fishery Management Council.
- Fenical, W. 1996. Marine biodiversity and the medicine cabinet: the status of new drugs from marine organisms. *Oceanography* 9: 23-27.
- Fielding, A. and E. Robinson. 1987. An underwater guide to Hawaii. University of Hawaii press, Honolulu, Hawaii. 156 pp.
- Friedlander, A.M. 1996. Assessment of the Coral Reef Resources of Hawaii With Emphasis on Waters of Federal Jurisdiction. Report to Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.
- Friedlander, A.M. and J.D. Parrish. 1998a. Temporal Dynamics of the Fish Assemblage on an Exposed Shoreline in Hawaii. *Env. Biol. Fish.* 53: 1-18.
- Friedlander, A.M. and J.D. Parrish. 1998b. Habitat Characteristics Affecting Fish Assemblages on a Hawaiian Coral Reef. *J. Exp. Mar. Biol. Ecol.* 224 (1): 1-30.
- Garcia, S. and A. Demetropolous. 1986. Management of Cyprus fisheries. FAO Fish. Tech. Pap. 250, United Nations Fish and Agriculture Organization, Rome.
- Garrod, P. and K. Chong. 1978. The Fresh Fish Market in Hawaii. Departmental Paper 23, Hawaii Agricultural Experiment Station, College of Tropical Agriculture, University of Hawaii, Honolulu.

- Gillman, E. 2000. Existing marine resources management framework and recent initiatives to change the governance of marine resources of the Northwestern Hawaiian Islands. Unpublished document.
- Glazier, E. 1999. Social Aspects of Hawaii's Small Vessel Troll Fishery. School of Marine Affairs, University of Washington, Seattle.
- Goreau, T.J., R.L. Hayes and A.E. Strong. 1997. Tracking South Pacific coral reef bleaching by satellite and field observations. Pages 1491-1494 *in* Proceedings of the Eighth International Coral Reef Symposium.
- Goto, A. 1986. Prehistoric ecology and economy of fishing in Hawaii: an ethnoarchaeological approach. Ph.D. dissertation, University of Hawaii, Honolulu, Hawaii.
- Green, A. 1997. An Assessment of the Status of the Coral Reef Resources, and Their Patterns of Use, in the U.S. Pacific Islands. Final report prepared for the Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.
- Green, A. and P. Craig. 1996. Rose Atoll: A Refuge for Giant Clams in American Samoa? Biological Report Series, Department of Marine and Wildlife Resources, Pago Pago, American Samoa.
- Grigg, R.W. 1993. Precious coral fisheries in Hawaii and the U.S. Pacific Islands. *Marine Fisheries Review* 55(2): 50-60.
- Grigg, R.W. 1997. Hawaii's coral reef: status and health in 1997 the international year of the reef. Pages 41-72 *in* The Status and Health of Coral Reefs in the Pacific - 1997, the International Year of the Reef (R.W. Grigg and C. Birkeland, Eds.). University of Hawaii Sea Grant College Program, Honolulu.
- Grigg, R.W., J.J. Polovina and M.J. Atkinson. 1984. Model of a coral reef ecosystem: III Resource limitation, community regulation, fisheries yield and resource management. *Coral Reefs*.
- Gulko, D. 1998. *In*, Hawaiian Coral Reef Ecology. Mutual Publishing, Honolulu, Hawaii, 166 pp.
- Haight, W., Parrish, J.D. and T.A. Hayes. 1993. Feeding ecology of deepwater lutjanid snappers at Penguin Bank, Hawaii. *Trans. Am. Fish. Soc.* 122: 328-347.
- Hamilton, M. 1994. Northwestern Hawaiian Island Bottomfish Fishery 1993 Vessel Activities, Costs and Economic Returns. Administrative Report H-94-1C, NMFS Southwest Fisheries Center Honolulu Laboratory, Honolulu, Hawaii.

- Hamilton, M.S. and S.W. Huffman. 1997. Coast-earnings study of Hawaii's small boat fishery, 1995-1996. SOEST 97-06, JIMAR Contribution 97-314, University of Hawaii Joint Institute for Marine and Atmospheric Research, Honolulu, Hawaii.
- Hamm, D.C. and H.K. Lum. 1992. Preliminary results of the Hawaii small-boat fisheries survey. Southwest Fisheries Center, Honolulu Laboratory, NMFS, NOAA, Honolulu, Hawaii. Southwest Fisheries Center Administrative Report H-92-08. 35 pp.
- Hamnett, M. and W. Pintz. 1996. The Contribution of Tuna Fishing and Transshipment to the Economies of American Samoa, the Commonwealth of Northern Mariana Islands, and Guam. Pelagic Fisheries Research Program, Joint Institute for Marine and Atmospheric Research, University of Hawaii, Honolulu, Hawaii.
- Hamnett, M.P., C. Anderson, R. Franco and C. Severence. In press. Socio-economic survey of pelagic fishermen in the Northern Mariana Islands. Draft report funded by NOAA's Pelagic Fisheries Research Program.
- Harman, R.F. and A.Z. Katekaru. 1988. Hawaii Commercial Fishing Survey: Summary of Results. Division of Aquatic Resources, Department of Land and Natural Resources, Honolulu, Hawaii.
- Hatcher, B.G., R.E. Johannes and A.I. Robertson. 1989. Review of research relevant to the conservation of shallow tropical marine ecosystems. *Oceanogr. Mar. Biol. Annu. Rev.* 27: 337-414.
- Hau, S. 1984. Economic analysis of deep bottomfishing in the Northwestern Hawaiian Islands. *In*, Proceedings of the Second Symposium on Resource Investigations in the Northwestern Hawaiian Islands (R. Grigg and K. Tanoue, Eds.). University of Hawaii Sea Grant Miscellaneous Report UNIHI-SEAGRANT-MR-84-01.
- Hay, M.E. and W. Fenical. 1996. Chemical ecology and marine biodiversity: insights and products. *Oceanography* 9: 10-20.
- Hensley, R.A. and T.S. Sherwood. 1993. An overview of Guam's inshore fisheries. *Marine Fisheries Review* 55(2): 129-138.
- Hida, T.S. and R.A. Skillman. 1983. A Note on the Commercial Fisheries in Hawaii. National Marine Fisheries Service Southwest Fisheries Center, Honolulu Laboratory, Honolulu, Hawaii.
- Holland, K.M. 1985. Seasonality of Catch Per Unit Effort of the Sport Fishing Fleet at Kewalo Basin, Hawaii. Sea Grant Tech. Report UNIHI-SEAGRANT-TR-86-01, University of Hawaii Sea Grant College Program, Honolulu, Hawaii.

- Holthus, P.F. and J.E. Maragos. 1995. Marine ecosystem classification for the tropical island Pacific (Chapter 13) *in* Marine and Coastal Biodiversity in the Tropical Island Pacific Region (J.E. Maragos, M.H.A. Perterson, L.B. Eldredge, J.E. Bardach and H.E. Takeuchi Eds.). East-West Center, Ocean Policy Institute, and Pacific Science Association, Honolulu, Hawaii.
- Hopley, D. and D.W. Kinsey. 1988. The effects of a rapid short-term sea level rise on the Great Barrier Reef. Pages 189-201 *in* Greenhouse: Planning for a Climate Change (G.I. Pearman, Ed.). E. J. Brill, New York, New York.
- Hughes, T.P. 1994. Catastrophes, phase shifts, and large-scale degradation of a Caribbean coral reef. *Science* 265: 1547-1551.
- Hunter, C. 1995. Review of Coral Reefs Around American Flag Pacific Islands and Assessment of Need, Value, and Feasibility of Establishing a Coral Reef Fishery Management Plan for the Western Pacific Region. Final report prepared for Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.
- Huston, M.A. 1985. Patterns of species diversity on coral reefs. *Ann. Rev. Ecol. Syst.* 6: 149-177.
- Irons, D.K., R.K. Kosaki and J.D. Parrish. 1990. Johnston Atoll Resource Survey Final Report - Phase Six (21 Jul 89 - 20 Jul 90). Dept. of the Army, U.S. Army Engineer District, Honolulu, Fort Shafter, Hawaii.
- Itano, D. and T. Buckley. 1988. Observations of the mass spawning of corals and palolo (*Eunice viridris*) in American Samoa. Department of Marine and Wildlife Resources, Pago Pago, American Samoa.
- Iverson, R.T.B., T. Dye and L.M. Paul. 1989. Native Hawaiian Fishing Rights, Phase 2 Main Hawaiian Islands and the Northwestern Hawaiian Islands. Report prepared by Pacific Fisheries Consultants for the Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.
- Jennison-Nolan, J. 1979. Guam: changing patterns of coastal marine exploitation. SeaGrant Publication UGSG 79-12.
- Johannes, R.E. 1978. Reproductive strategies of coastal marine fishes in the tropics. *Env. Biol. Fishes* 3: 65-84.
- Johannes, R.E. 1998. The case for data-less marine resource management: examples from tropical nearshore fisheries. *Trends in Ecology and Evolution* 13(6): 233-246.

- Jokiel, P.L. B. Tissot, J. Pye and E.F. Cox. 1999. The Hawaii coral reef assessment and monitoring program (CRAMP). Presented at the International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring, and Restoration. April 14-16, 1999, Ft. Lauderdale, Florida.
- Jordan, D. and Evermann, B. 1902. An investigation of the fishes and fisheries of the Hawaiian Islands: a preliminary report. Extracted from the U.S. Fish Commission Report for 1901, U.S. Government Printing Office, Washington, D.C.
- Joseph, A. and V. Murray. 1951. Chamorros and Carolinians of Saipan. Harvard University Press, Cambridge, Massachusetts.
- Kahaulelio, A.D. 1902. Fishing Lore. Ms. in Library. B.P. Bishop Museum, Honolulu. *Ka Nupepa Kuokoa*, 13 installments. Trans. M.K. Pukui.
- Katnik, S.E. 1982. Effects of Fishing Pressure on the Reef Flat Fisheries of Guam. MS thesis. University of Guam, Mangilao, Guam.
- Kirch, P.V. and T.S. Dye. 1979. Ethno-archaeology and the development of Polynesian fishing strategies. *J. Polynesian Society* 88(1): 53-76.
- Kitchell, J.F., C. Boggs, X. He and C.J. Walters. 1999. Keystone predators in the central Pacific. Pages 665-683 in *Proceedings of the Wakefield Symposium on Ecosystem Approaches for Fisheries Management*, Alaska Sea Grant College Program.
- Knudson, K.E. 1987. Non-Commercial Production and Distribution in the Guam Fishery. Micronesian Area Research Center, University of Guam, Mangilao, Guam.
- Konishi, R. 1930. Fishing industry of Hawaii with special reference to labor. Unpublished manuscript, Hamilton Library Pacific Collection, University of Hawaii, Honolulu, Hawaii.
- Kosaki, R. 1954. Konohiki Fishing Rights. Honolulu: Legislative Reference Bureau, Hawaii.
- Lawrie, J.J. and E.H. Borneman. 1999. Positive and negative impacts of the marine aquarium trade on coral reefs. Presented at the International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring, and Restoration. April 14-16, 1999, Ft. Lauderdale, Florida.
- Long, N. and A. Long. 1992. *Battlefields of Knowledge*. London, Routledge.
- MacDonald, C.D. and C.A. Mitsuyasu. 2000. Regulatory setting for very large floating platforms in Hawaii. *Ocean and Coastal Management* 43: 65-85.

- Mace, P.M. 1994. Relationships between common biological reference points used as thresholds and targets of fisheries management strategies. *Can. J. Fish. Aquat. Sci.* 51: 110-122.
- Maragos, J.E., M.P. Crosby and J.W. McManus. 1996. Coral reefs and biodiversity: a critical and threatened relationship. *Oceanography* 9(1): 83-101.
- Marris, K. 1992. The allure of aloha. *Seafood Business*. July/August.
- Marshall, N. 1980. Fishery yields of coral reefs and adjacent shallow water environments. Pages 103 *in* Proceedings of an International Workshop on Stock Assessment for Tropical Small Scale Fisheries (P.M. Roedel and S.B. Saila, Eds.). University of Rhode Island, Kingston.
- Marten, G.G. and J.J. Polovina. 1982. A comparative study of fish yields from various tropical ecosystems. Pages 255-286 *in* Theory and Management of Tropical Fisheries (D. Paul and G.I. Murphy, Eds.). ICLARM, Manila.
- McCoy, M.A. 1997. The Traditional and Ceremonial Use of the Green Turtle (*Chelonia mydas*) in the Northern Marianas, with Recommendations for its Use in Cultural Events and Education. Prepared for the Western Pacific Regional Fishery Management Council and the University of Hawaii Sea Grant Program, Honolulu, Hawaii.
- Meyer, U. 1987. Management of Access to Fisheries in American Samoa; an Initial Report. Prepared by Meyer Resources, Inc. for the Office of Marine Resources, Government of American Samoa, Pago Pago.
- Miller, A.J., D.R. Cayan, T.P. Barnett, N.E. Graham and J.M. Oberhuber. 1994. Inter-decadal variability of the Pacific Ocean: model response to observed heat flux and wind stress anomalies. *Climate Dynamics* 9: 287-302.
- Miyasaka, A. 1991. Hawaii's Aquarium Fish Industry, a Business Profile. Division of Aquatic Resources. Division of Aquatic Resources, Department of Land and Natural Resources, State of Hawaii, Honolulu.
- Miyasaka, A. 1997. Status Report, Aquarium Fish Collections, Fiscal Year 1994-95. Division of Aquatic Resources, Department of Land and Natural Resources, State of Hawaii, Honolulu.
- Moss, D. R. 2000. Legal Opinion regarding the Administration of Coral Reef Resources in the Northwestern Hawaiian Islands. U.S. Department of Justice, Office of Legal Counsel, September 15, 2000.

- Munro, J.L., editor. 1983. Carribean coral reef fishery resources. ICLARM Studies and Reviews 7. Manila, International Center for Living Aquatic Resources Management.
- Munro, J.L. 1984. Coral reef fisheries and world fish production. NAGA, the ICLARM Newsletter 7(4): 3-4.
- Munro, J.L. 1999. Effects of fishing on coral reef ecosystems. *In*, Proceedings of the Norway/UN Conference on the ecosystem approach to sustainable use biological diversity (P.J. Schei, O.T. Sandlund and R. Strand, Eds.). Norwegian Directorate for Nature Management and Norwegian Institute for Nature Research, Trondheim.
- Myers, R.F. 1993. Guam's small-boat-based fisheries. Marine Fisheries Review 55(2): 117-28.
- Myers, R.F. 1997. Assessment of Coral Reef Resources of Guam With Emphasis on Waters of Federal Jurisdiction. Report prepared for the Western Pacific Regional Fisheries Management Council, Honolulu.
- Nakashima, L. 1934. Little known jobs in Hawaii: Capt. Sakuyo Otani, veteran Hawaii fisherman. Honolulu Star Bulletin, 24 March, 1934. 4 pp.
- NMFS (National Marine Fisheries Service). 1999. Our Living Oceans. Report on the status of U.S. living marine resources. NOAA Tech. Memo NMFS-F/SPO-41, U.S. Department of Commerce, Washington, D.C.
- Norgaard, R.B. 1994. Development Betrayed: The End of Progress and a Coevolutionary Revisioning of the Future. London, Routledge.
- Ogawa, D. 1973. Jan Ken Po: The world of Japanese Americans. Japanese American Research Center, Honolulu, Hawaii.
- OHA (Office of Hawaiian Affairs). 1998. Native Hawaiian Data Book 1998, State of Hawaii Office of Hawaiian Affairs on-line data book. [[www.oha.org/databook/index98.html](http://www.oha.org/databook/index98.html)].
- Okahata, J. editor. 1971. A history of Japanese in Hawaii. The United Japanese Society of Hawaii, Honolulu.
- Onizuka, E.W. 1972. Management and development investigations of the Kona crab, *Ranina ranina* (Linnaeus). Final report to the Division Aquatic Resources, Department of Land and Natural Resources, State of Hawaii, Honolulu.
- Orbach, M.K. 1980. Report on the Social, Cultural, and Economic Aspects of Fishery Development in the Commonwealth of the Northern Mariana Islands. A report to the Pacific Marine Fisheries Commission.



- Parrish, F.A. and T.K. Kazama. 1992. Evaluation of ghost fishing in the Hawaiian lobster fishery. *Fish. Bulletin* 90: 720-725.
- PBDC (Pacific Basin Development Council). 1995. American Flag Pacific Islands Coral Reef Initiative management program planning meeting summary report. Prepared on behalf of the American Flag Pacific Islands Governments by Pacific Basin Development Council. 24 pp.
- Peterson, S. 1973. *Decisions in a Market: A Study of the Honolulu Fish Auction*. Ph.D. dissertation. University of Hawaii, Honolulu, Hawaii.
- Polovina, J.J. 1984. Model of a coral reef ecosystem: 1. the ECOPATH model and its application to FFS. *Coral Reefs* 3: 1-11.
- Polovina, J.J. 1993. The lobster and shrimp fisheries in Hawaii. *Marine Fisheries Review* 55(2): 28-33.
- Polovina, J.J. and W.R. Haight. 1999. Climate variation, ecosystem dynamics and fisheries management in the Northwestern Hawaiian Islands. *Ecosystem Approaches for Fishery Management*. AK-SG-99-01: 23-32, Alaska Sea Grant College Program.
- Polovina, J.J., G. Mitchum, H. Graham, M. Craig, E. DeMartini and E. Flint. 1994. Physical and biological consequences of a climate event in the central North Pacific. *Fish. Oceanogr.* 3(1): 15-21.
- Polunin, N.V.C. and R.D. Morton. 1992. Fecundity- Predicting the Population Fecundity of Local Fish Populations Subject to Varying Fishing Mortality. Unpublished report, Center for Tropical Coastal Management, Univ. Newcastle upon Tyne, Newcastle.
- Polunin, N.V.C. and C. Roberts, editors. 1996. *Tropical Reef Fisheries*. London, Chapman and Hall.
- Polunin, N.V.C., C.M. Roberts and D. Pauly. 1996. Developments in tropical reef fisheries science and management. Pages 161-192 *in* *Tropical Reef Fisheries* (N.V.C. Polunin and C. Roberts editors). Chapman and Hall, London.
- Pomerance, R. 1999. Coral bleaching, coral mortality and global climate change. Presented to U.S. Coral Reef Task Force, March 5-6, 1999, Maui, Hawaii. 17 pp.
- Pooley, S.G. 1993a. Economics and Hawaii's marine fisheries. *Mar Fish Rev* 55(2): 93-101.
- Pooley, S.G. 1993b. Hawaii's marine fisheries: some history, long-term trends, and recent developments. *Marine Fisheries Review* 55(2): 7-19.

- Pooley, S.G. and K.E. Kawamoto. 1998. Annual Report of the 1995-97 Western Pacific Lobster Fishery. Administrative Report H-98-09, Southwest Fisheries Science Center, NMFS, Honolulu Laboratory, Honolulu, Hawaii.
- Radke, H. and S. Davis. 1995. Analysis of Saipan's Seafood Markets. Final report prepared under solicitation number RFP94-006, A report to the CNMI Division of Fish and Wildlife, Saipan.
- Ralston, S. and J.J. Polovina. 1982. A multispecies analysis of the commercial deep-sea handline fishery in Hawaii. *Fish Bull* 80(3): 435-48.
- Reaka-Kudla, M.L. 1999. Cost-effective assessment of biodiversity on coral reefs. Presented at the International Conference on Scientific Aspects of Coral Reef Assessment, Monitoring, and Restoration. April 14-16, 1999, Ft. Lauderdale, Florida.
- Restrepo, V.R., G.G. Thompson, P.M. Mace, W.L. Gabriel, L.L. Low, A.D. MacCall, R.D. Methot, J.E. Powers, B.L. Taylor, P.R. Wade and J.F. Witzig. 1998. Technical Guidance on the Use of Precautionary Approaches to Implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act. NOAA Technical Memorandum NMFS-F/SPO-31, NOAA/NMFS, Washington, D.C.
- Russ, G.R. 1991. Coral reef fisheries: effects and yields. Pages 600-635 in *The Ecology of Fishes on Coral Reefs* (P.F. Sale, Ed.). Academic Press, San Diego, California.
- Russ, G.R. and A.C. Alcala. 1994. Marine reserves: they enhance fisheries reduce conflicts and protect resources. *Naga, The ICLARM Quarterly* 17(3): 4-7.
- Sale, P.F. 1991. *The Ecology of Fishes on Coral Reefs*. Academic Press, San Diego, California.
- Saucerman, S. 1995. Assessing the management needs of a coral reef fishery in decline. Pages 441-455 in *South Pacific Commission and Forum Fisheries Agency Workshop on the Management of South Pacific Inshore Fisheries* (P. Dalzell and T.J.H. Adams, Eds.). Manuscript Collection of Country Statements and Background Papers, South Pacific Commission, Noumea.
- Schroeder, R.E. 1989. *The Ecology of Patch Reef Fishes in a Subtropical Pacific Atoll: Recruitment Variability, Community Structure and the Effects of Fishing Predators*. Ph.D. Dissertation. University of Hawaii, Honolulu, Hawaii.
- Schultz 1953. *Samoan Proverbial Expressions*. Polynesian Press, Auckland.
- Severance, C.J., R. Franco, M. Hamnett, C. Anderson and F. Aitaoto. 1998. Effort comes from the cultural side: profiles of pelagic fishermen and catch distribution in American Samoa. Unpubl. manuscript.

- Severance, C.J. and R. Franco. 1989. Justification and Design of Limited Entry Alternatives for the Offshore Fisheries of American Samoa, and an Examination of Preferential Fishing Rights for Native People of American Samoa within a Limited Entry Context. Report submitted to the Western Pacific Regional Fishery Management Council, Honolulu.
- Shallenberger, R. 2000. Statement of Rob Shallenberger, Midway Wildlife Refuge Manager, USFWS Pacific Island Eco-Region, to the Western Pacific Regional Fishery Management Council at the 105th Council Meeting at Midway.
- Shomura, R.S. 1987. Hawaii's marine fishery resources; yesterday (1900) and today (1986). Southwest Fisheries Center Administrative Report H-87-21, NMFS Southwest Fisheries Center Honolulu Lab, Honolulu, Hawaii.
- Smith, R.P. 2000a. Memorandum from Robert Smith, Manager, USFWS Pacific Island Eco-Region, to Penelope Dalton, Assistant Administrator, NMFS.
- Smith, R.P. 2000b. Statement of Robert Smith, Manager, USFWS Pacific Island Eco-Region, to the Western Pacific Regional Fishery Management Council at the 104th Council Meeting at Makena, Hawaii.
- Smith, S.V. 1978. Coral-reef area and the contributions of reefs to processes and resources in the world's oceans. *Nature* 273: 225-226.
- Springer, V.G. 1982. Pacific Plate Biogeography, With Special Reference to Shorefishes. Smithsonian Contributions to Zoology, No. 367, Smithsonian Institution, Washington, D.C.
- Stevenson, D.K. and N. Marshall. 1974. Generalizations on the fisheries potential of coral reefs and adjacent shallow-water environments. Pages 147-156 *in* Proceedings of the Second International Coral Reef Symposium, University of Queensland, Brisbane.
- Titcomb, M. 1972. Native Use of Fish in Hawaii. Honolulu, University Press of Hawaii.
- URS Corp. In preparation. Preliminary Draft Environmental Impact Statements for the Bottomfish Fishery Management Plan (FMP), Crustaceans FMP, and Precious Corals FMP. Prepared by Dames & Moore (URS) for the Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.
- USFWS (U.S. Fish and Wildlife Service). 1986. Hawaiian Islands National Wildlife Refuge Master Plan/Environmental Impact Statement. Department of Interior, Region One.
- USFWS (U.S. Fish and Wildlife Service). 1997. Public Use Plan for Midway Atoll National Wildlife Refuge. U.S. Department of the Interior, Fish and Wildlife Service. July 1997. 26 pp.

- USFWS (U.S. Fish and Wildlife Service). 1999a. Pacific Island National Wildlife Refuges: Hawaiian Islands National Wildlife Refuge. Pacific Islands Ecoregion, Honolulu, Hawaii.
- USFWS (U.S. Fish and Wildlife Service). 1999b. Midway Atoll National Wildlife Refuge Historic Preservation Plan. Department of the Interior, Washington, D.C.
- USFWS (U.S. Fish and Wildlife Service) and BC (Bureau of the Census). 1998. 1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. U.S. Fish and Wildlife Service, Department of the Interior, and Bureau of the Census, Department of Commerce, Washington, D.C.
- Veron, J.E.N. 1995. Corals of the tropical island Pacific region. Pages 75-82 *in* Marine and Coastal Biodiversity in the tropical island Pacific region (J.E. Maragos, M.N.A. Peterson, L.G. Eldredge, J.E. Bardach and H.F. Tekeuchi, Eds.). Vol. 1, Species systematics and information management priorities. The East-West Center, Honolulu, Hawaii.
- Walsh W.J. 1987. Patterns of recruitment and spawning in Hawaiian reef fishes. *Env Biol of Fishes* 18(4): 257-76.
- Wass, R.C. 1982. The shoreline fishery of American Samoa: past and present. Pages 51-83 *in* Marine and Coastal Processes in the Pacific: Ecological Aspects of Coastal Zone Management (J.L. Munro, Ed.). UNESCO, Jakarta.
- Wells, S.M. and M.D. Jenkins. 1988. Coral Reefs of the World. Volume 3: Central & Western Pacific. Nairobi and Gland, United Nations Environment Programme / International Union for the Conservation of Nature.
- White, A.T. 1988. The effect of community managed marine reserves in the Philippines on their associated coral reef fish populations. *Asian Fish. Sci.* 2: 27-41.
- WPRFMC (Western Pacific Regional Fishery Management Council). 1986. Amendment 4 to the Fishery Management Plan for Lobster Fisheries of the Western Pacific Region. Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.
- WPRFMC (Western Pacific Regional Fishery Management Council). 1996. Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region; 1995 Annual Report.
- WPRFMC (Western Pacific Regional Fishery Management Council). 1999a. Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region; 1998 Annual Report. Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.

- WPRFMC (Western Pacific Regional Fishery Management Council). 1999b. Draft Amendment 12 to the Fishery Management Plan for Crustaceans, Draft Amendment 8 to the Fishery Management Plan for Bottomfish of the Western Pacific Region and Draft Amendment 6 to the Fishery Management Plan for Precious Corals. (Inclusion Amendment) Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.
- WPRFMC (Western Pacific Regional Fishery Management Council). 2000a. Pelagic Fisheries of the Western Pacific Region; 1999 Annual Report. Western Pacific Regional Fishery Management Council, Honolulu, Hawaii.
- WPRFMC (Western Pacific Regional Fishery Management Council). 2000b. Pacific Islands Fishery News. Summer 2000, pp. 1-2.
- Yamamoto, T. editor. 1970. The Rainbow: a history of the Honolulu Japanese Chamber of Commerce. Japanese Chamber of Commerce, Honolulu, Hawaii.
- Yamase, D. 1982. State-federal jurisdiction conflict over submerged lands in the Northwestern Hawaiian Islands. *Hawaii Law Review* 4(1): 139-180.

